The Builder.

VOL. LXI. No. 2548. SATURDAY, DECEMBER 5, 1891.

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The Victorian Exhibition.

AS compared with the Stuart and the Tudor exhibitions, and even with the Guelph exhibition, we fear the Victorian exhibition must be pronounced decidedly inferior in interest. The paintings form by far the largest element in the show, and though some of the paintings of public men of recent years by such artists as Millais, Watts, Holl, and others are works of art of the highest class, and it is pleasant to meet them again, they have been too recently exhibited, and are too fresh in the memory of every one, to give a new or special interest to an exhibition of portraits in which they are but a few among a majority of inferior works. The portraits and court pictures of the earlier years of the present reign are mostly very poor productions, some of them absurdly bad, and the eminent personages represented in them are not far enough removed, in a historical sense, for the spectator to feel an interest in any portrait, however poor, which records their lineaments and personality. Most of the portraits in the Stuart exhibition were very poor in an artistic sense, but their historic interest was very great. In the Tudor exhibition we had the great name of Holbein as the illustrator of men whose names were also of historic interest, and thus the artistic and historic values were combined. But the inferiority of the present exhibition is most notable in regard to the objects of decorative art, or those in which decorative art might be exemplified, collected in the separate glazed cases in the various rooms. In the Tudor exhibition there was some splendid work in the way of silver, embroideries, &c.; in the Guelph exhibition we had the work of such men as Flaxman and Wedgwood. But those who look for objects of artistic value in the cases in this exhibition will look in vain. Relics there are of considerable interest from the relic point of view, but of artistic value the miscellaneous exhibits are for the most part utterly barren. And that this is so is certainly due partly to a want of perception on the part of the management. The earlier portion of our present monarch's long and honoured reign was no doubt a very dead period in regard to artistic production and artistic perception, but surely some recognition might have been made of the great awakening that has taken place during the last few years in regard to decorative design in such things as textile design, faïence, wrought-iron work, &c. We should also have expected to have seen some memento of the Exhibition of 1851, which, in spite of defects which we can see now, was the beginning of so much in modern art work. Surely also the building of the Houses of Parliament was no small event of the reign, and might have been commemorated by a model of the great palace of legislature; and we cannot but think it a grave omission that among the portraits of architects that of Sir Charles Barry, the author of this great work, and incomparably the greatest architect of the Victorian era, should be wanting. The nation treated him so ill during his lifetime that they might at least afford him the tardy justice of a little recognition now. No doubt the discoveries in science are the great facts of the Victorian period, and these are recognised by the presence of models of locomotives, of the Forth Bridge, of specimens of dynamos and telephones, &c. Such examples form indeed but a meagre indication of all that science has achieved in this scientifically memorable era. The difficulty of such an exhibition in fact lies in the immense mass of material which is available for the illustration of a period so recent and of which we know so much. The social, the artistic, and the scientific aspects of the Victorian era might each have claimed a separate exhibition. The attempt has been made to some extent to blend them, but the blending is ill-balanced. The portraits and personal memorials over-weight everything else; the managers of the exhibition seem to have had no clearly-devised programme in view. Science is but feebly represented, and art not at all, save in the accidental fact that some of the more recent portraits are great works of art; but they are obviously not hung as such, they are hung merely as likenesses of eminent men.

The pictures in the first (West) gallery are calculated to convey a certain satisfaction to the soul of the art-critic; they show us at least what we have escaped or emerged from. Here we have the apotheosis of Winterhalter and his compeers, the painters of those extraordinary tea-board performances whereby it pleased the Court of that period that its great functions should be commemorated. There is something indescribably ludicrous, from the point of view of the present day, in these hard paintings of collections of extremely dressed-up people, as stiff in their attitudes as dolls, and with no more expression. C. R. Leslie made an attempt to do something better with his picture of the Queen receiving the Sacrament after her coronation, and certainly managed to get a better tone and texture out of the mass of bright robes, but the conventional reticence as to the natural expression of feeling, which Court ceremony imposes on such occasions, leaves the painter with an almost hopeless task before him. In the North Gallery is a more successful effort by Sir James Linton, "The Marriage of the Duke of Albany" (126), in which the artist has taken the moment of departure from the chapel after the ceremony, so as to succeed in breaking up the groups and imparting a little movement to the picture; here the colour is very fine and the personages are more like living beings and less like dolls than in many others of these ceremonial pictures. Mr. Caton Woodville too has some success in the picture of the marriage of the Princess Beatrice (107), but is the interior architecture of Whippingham Church really as fearful as that? Mr. Richmond's half-length of the Princess of Wales (48), in the North Gallery, is a really charming portrait in a somewhat mannered and over-polished style.

Among the pictures in the North Gallery which it is a pleasure to meet with again are Holl's remarkably powerful and effective portrait of Lord Overstone (89); Sir John Millais' wonderful portrait of Earl of Shaftesbury (129), which seems to sum up the whole history of the modern evangelical religious movement in its best aspect; the same great painter's likeness of John Bright (136) and the equally remarkable though unfinished portrait of Lord Beaconsfield (132), and Mr. Herkomer's "Lord Stratford de Redcliffe" (141), a picture equally fine in regard to character and colour. In the picture of the Queen distributing medals to the Heroes of the Crimea on the Horse Guards' Parade

(150) poor E. M. Ward managed to combine a spirited representation of the scene with a fine effect of light and atmosphere, and in this respect the work stands rather alone among pictures of its class, at any rate in the present collection.

Portraits of men of intellect seem to be intended to be mainly represented in the south gallery; most of these are interesting personally, some of them artistically. Holl's half-length of that noble soldier, Sir Herbert Stewart (156) is a truly heroic portrait; Sir Thomas Lawrence's Lady Peel (165) a masterpiece in colour. Sir William Allan's little portrait of Turner (167), in a high felt hat set on the back of his head, is one of the most characteristic things in the room. A portrait which has a curious kind of interest for architects in the present day is the highly elaborated one by Herbert of Augustus Welby Pugin (177), a subject after Herbert's own heart. Pugin is represented seated at a table in a semi-mediæval kind of costume and with a suggestion of a curious blending of the church architect and the Catholic priest in his expression and get-up; the frame of the picture is elaborately decorated with ornament in the orthodox Gothic style. The portrait of Cockerell, lent by the Institute of Architects and well known to many of our readers, hangs close to this, and serves to remind us both of a charming and accomplished *dilettante* architect (for that perhaps was Cockerell's real platform) and an able portrait-painter, Boxall, who never achieved quite the success which his real and refined abilities merited. Among the other attractions of this room are Sir J. Millais' fine portrait of Sterndale Bennett in his doctor's gown (188), Landseer's well-known and characteristic portrait of himself drawing, with two dogs looking over his shoulder (189), Mr. G. Richmond's "Bishop of Oxford" (197), Mr. G. F. Watts's rather sentimental likeness of Sir Henry Taylor, and the same painter's wonderful portrait of John Stuart Mill (227) which, like Sir J. Millais' "Lord Shaftesbury" and "John Bright," seems not merely a portrait of the features but of the whole character of the man.

As already observed, the objects in the cases present little of artistic interest, but in case C of "Relics and Miniatures" is one little bit of good art in the shape of the silver tea-service formerly belonging to Turner. Three "pieces" are exhibited, simple but perfectly good in their lines of design and in their slight but tasteful ornament. We like to think of the great landscape painter showing his pure taste in the selection of such articles as these; one wonders whether they were made for him; at all events they are among the few things of the kind that are worth notice in the exhibition. A silver badge won by Sir Bartle Frere at a shooting match in Upper Scinde, in the same case, appears to be of Indian make, and is certainly a good bit of work. Things of this kind, however, are few and far between in the collection. The gold casket presented to Sir Bartle Frere in 1873, containing the Freedom of the City of London, is a poor piece of shop goldsmith's work, worth little except for its bullion value. In case D in the same gallery is a collection of the Insignia of the British Order of Knighthood, lent by her Majesty; the chains and stars representing the Orders of the Garter, Thistle, the various Orders of the Bath, and the Order of St. Michael and St. George. It would be of some interest, from an artistic point of view, to know at what date the designs for these insignia were made, and whether it is not possible, without impairing the worth of the orders in regard to historical interest and honourable signification, to issue a new and improved edition of the designs, of a higher artistic character and more in accordance with the improved taste and perception in such matters which certainly distinguishes the recent days of the present reign, as compared with that of its earlier years. It is melancholy to see such a collection of poor tinsel designs, with no artistic feeling about them, as the representative decorations of our court. The majority of these insignia certainly cannot be as old as the institution of the orders they represent, and therefore fresh designs must have been issued at some time. If so, why not redesign them again at the present day, at the hands of a first-class artist? It would surely be no derogation from the value of the honour conferred, that the outward badge of it should be a thing of artistic beauty, instead of a poor piece of commonplace design such as no man of taste would care to wear for its decorative effect.

Among the "relics" is a case of Thackeray relics and a case of Dickens relics, the latter not of very much interest; among the former are some of Thackeray's characteristic sketches. In the north gallery are two cases of relics of Gordon,—

> "That great injured name,
> The glory of his country and the shame,"—

to adapt Pope's couplet, and which have an interest beyond that of art, if we may be allowed to say so. The large collection of autograph letters arranged in the balcony should not be overlooked, and constitutes one of the most interesting features of the exhibition.

Among the "Science" exhibits in the Central Hall are two interesting and finely-executed models of locomotives,—one of a broad-gauge engine built in 1837, which continued running till 1870, having covered a distance of 429,000 miles; and one of a London and North-Western Railway engine, on Mr. Webb's three-cylinder system, built in 1887. These appear to be made to the same scale, or approximately so; but the scale should have been stated. The broad-gauge model was made by the late Sir Daniel Gooch, who designed the engine, which was built by Robert Stephenson & Co. The Brush Electrical Engineering Company exhibit a "Victoria" dynamo electrical machine, and some examples of incandescent lamps which may serve their purpose very well, but are poor in design. Nothing adequate seems to have been done yet in the designing of electric lamps, and from our Paris correspondent's letter on another page it will be seen that efforts to elicit some good designs for this class of lamps in Paris have been so far failures. Fire-engines, photography, fire-arms, and the development of the Post Office service, are each illustrated by early and late examples of manufactures or methods of working. A curious memorandum of the change in the times since the commencement of the reign is seen in the holster-pistol carried by the Post Office mailman in Sussex in 1839.

Among the various objects in the Central Hall is one which is of both artistic and historic interest, the shield presented to Sir James Outram by his friends on his departure from India in 1861. This is the work of Mr. Armstead, and is a fine example of metal relief, the boss of the shield being formed by a group in high relief representing Outram on horseback grouped with some other figures, the shield being surrounded by battle-subjects in low relief, separated from the centre group by a band of decorative design. It is an example of sculptor's work in metal which should not be overlooked.

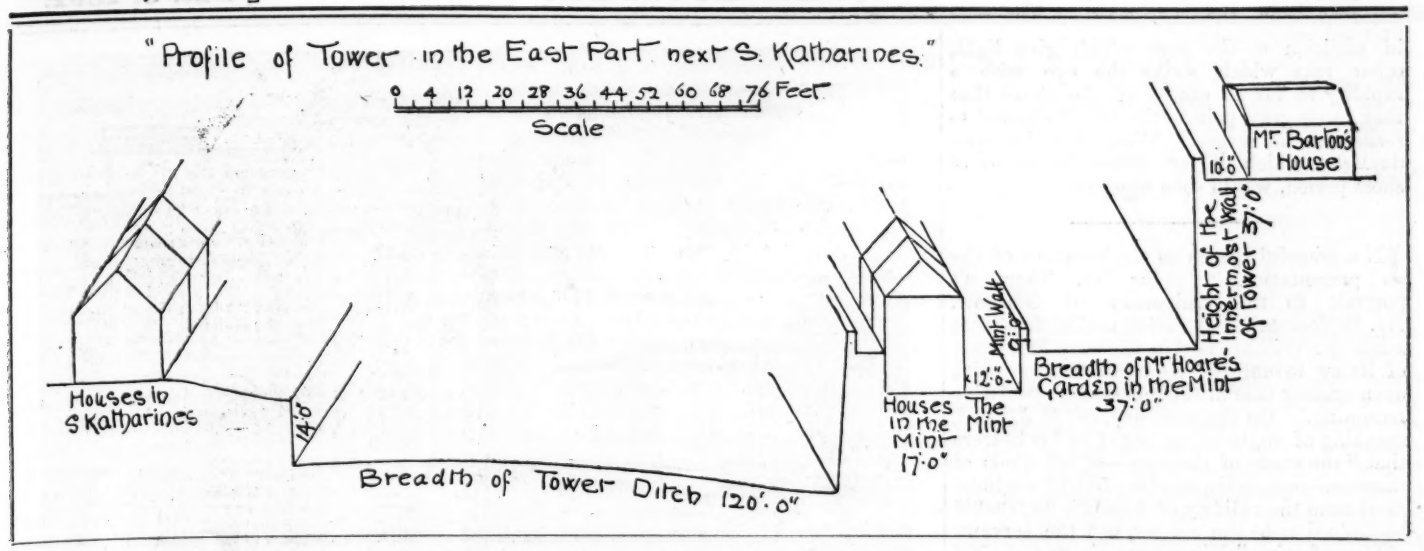
THE ROYAL MINT IN THE TOWER.

THE twenty-first annual report (1890) of the Deputy-Master of the Mint contained an interesting plan, neatly printed in colours, of the Mint buildings in the Tower of London. This is reproduced to one-third size of the original, from a stained parchment recently found amongst the Mint records. It is inscribed "AN Exact Survey of the Ground-Plot or Plan of his Majest[y]. Office of MINT," and bears "A Scale of Feet [90 to 1 in.] by W. Alingham, Feb. 26, 170$\frac{9}{1}$." The Mint, and the Irish Mint* to the east, with their central roadway, are seen to occupy nearly all of the outer ward around every side, save the south, of the Tower. Beyond the moat stretches the "rampire," which was thrown open as a public recreation-ground on April 30, 1888. The plan sets out all the workshops, together with lodgings for various officials, amongst whom at that date were Hopton Haynes, weigher and teller, and Sir Isaac Newton, Master,—of whom presently. The "Master-Worker's Lodgings" appear between Bell and Byward Towers, at the south-western angles of the inner and outer ballium walls respectively,—a site since occupied by a soldiers' canteen, known as the stone kitchen, and pulled down in 1827.* Following, firstly, the line of the inner ballium-wall, from Bell Tower, we find Beauchamp Tower as between the Comptroller's and the charcoal houses; the Assay Master's and the Engraver's house and office abut against "Diverin" (Devereux) Tower; five mill-rooms against two long lengths of "solid wall" on either side of Flint Tower; a smith's shop against Bowyer Tower; the Warden's and Comptroller's gardens against Jewel (or Martin, *prius* Brick), Constable, and Broad Arrow Towers; with more "Mill Roomes, lately Baraks," between the last-named and Salt (Julius Cæsar's) Towers. We are now in the Irish Mint, in the south-eastern part of the outer ward. Retracing our steps, and following on our right hand the outer ballium-wall, we pass, in turn, the "Engineers for the Monyrs," the Comptroller's stables, and the "Provost of the Moneyr's house." Next stands the Weigher and Teller's house, then comes Brass Mount, and then the Warden's and Deputy-Warden's houses. After these are the Melter's and the King's Clerk's houses; the "Smith of the [Tower] Ordinance"; "Moneyrs Hall and Lodgings"; the Deputy-Comptroller's house; "Legs Mount" [Legges Mount Battery]; some "Barraks formerly the Assay Master's house;" the gold and silver, and "ffarthing" press houses; the silver melting-house; assay office; gold melting-house, with treasury over it; office; and then, as above, the Master Worker's lodgings, whence we started. Of all these buildings nothing now remains, so far as we can see, except the house at the back of Legges Mount: the outer face of the inner ballium wall is cleared to the ground, whilst various barrack rooms, prisoners' cells, stables, married soldiers' quarters, &c., are ranged around the inner side of the outer ballium wall. A few are delineated in several views, taken chiefly from the now Tower Dock, west of the Tower, the earliest being Van den Wyngaerde's, *circa* 1550, and the survey by W. Haiward and J. Gascoyne, 1597. C. Tomkins's water-colour drawings of 1801, in the Crowle Pennant, show furnace chimneys near to Legges Mount. The reader might also look at R. Havell & Son's coloured print, 1821; G. Budd and P. C. Canot's large print of the execution of sentence upon Lords Kilmarnock and Balmerino, with L. Knyff and L. Kip's view, of about 1710, in the Crace Collection. See also J. Black's coloured view, after Rowlandson and Pugin (1809), of one of the workshops.

But with the plan of 1700-1 should be compared a pen-and-ink "profile," undated, of the Mint, looking southwards, by St. Katharine's, in the Crowle Pennant, and which we take to show a state of things earlier in date. Since "Mr. Barton's house," on the inner ballium wall, and the houses in St. Katharine's to the east, are shown (see cut), the section must have been struck along a line north of Salt Tower, and possibly north of Broad Arrow Tower. The space, 37 ft., between the inner ballium wall and "The Mint," a roadway, 12 ft. wide, is marked as "Mr. Hoare's garden"; but between the garden and the roadway rises a wall,—"Mint Wall,"—9 ft. high; and that roadway, with the "houses in the Mint," lie at a lower level than that of the garden. This intervening wall and the difference of levels have long ago disappeared, nor is the wall marked upon the plan under review. The "garden" of the "profile" must be the site of either the mill-rooms, lately barracks, or the Comptroller's garden, at

* The names "Mint-street" and "Irish Barracks" yet survive. All is closed to the public.

* *Vide* a water-colour drawing by T. H. Shepherd, in the Crace Collection.


"Profile of Tower in the East Part next S. Katharines."
0 4 12 20 28 36 44 52 60 68 76 Feet
Scale
Houses to S Katharines
14·0
Breadth of Tower Ditch 120·0"
Houses in the Mint 17·0"
The Mint Wall 9·0"
12·0"
Breadth of Mr Hoare's Garden in the Mint 37·0"
Height of the Innermost Wall of Tower 37·0"
10·0"
Mr Barlow's House

present a stable, of the plan under review. The ditch, 120 ft. wide, has no water in it: it was finally dried in 1843. By the Deputy-Master's courtesy, and according to Ruding's "Annals of the Coinage," third edition, we find that James Hoare was Comptroller in 1672, Warden for a few months in 1693, and Comptroller during William III.'s reign until the appointment, in 1703, of John Ellis.

It is frequently averred,—we know not with what truth,—that money was coined at the Tower by our Norman line of Kings (most of the defensive outworks we describe were originally built by Henry II. and his sons, Richard I. and John). A mint seems to have been situated within its walls since Henry III.'s time, when the warden had a salary of 2s. per day. Some early references to the Tower mint are cited in two articles upon "Public Works and Buildings in London and Suburbs in the Sixteenth to Eighteenth Centuries," which we printed on December 30, 1882, and January 6 following. Edward III. made a grant to the Tower chaplain out of the officers' and workmen's wages. Ecclesiastics were sometimes nominated as comptrollers, a practice inveighed against by Latimer in a sermon. There, however, the Mint remained, with most of the antiquated appliances introduced in 1661-2 by Blondeau, until the opening, in 1811, of the present Mint, of which the design, begun by Johnson, was completed by Sir Robert Smirke. On October 31, 1815, much of that building was burnt, and portions of Boulton & Co.'s and John Rennie's new machinery suffered damage. It stands upon the site of the Government tobacco warehouses, formerly serving as the Navy Victualling Offices, to which we referred in a "Note" on June 6 last. See also Mr. H. W. Brewer's article, with illustration, in our columns of January 7, 1888.

In a letter written on March 19, 1695-6, to Newton, at Cambridge, Lord Halifax, then Charles Montague, offered to him the Wardenship of the Mint, with a salary of 600*l.* a year. In 1699 he succeeded to the Mastership, with 1,500*l.* a year. He introduced one new coin into circulation: the quarter-guinea piece. On thus first coming to abide in London, and relinquishing his best mathematical work, Newton lived in the east, and for a while, it is said, in a house that was pulled down forty years ago, in Haydon-square, Minories. But he soon moved westwards, to be nearer to his kinsman, Sir John Newton in Soho-square, and his other friends. At the date of the making of this plan his home was in Jermyn-street. As Master he was succeeded by John Conduitt, who had married (1717) Sir Isaac's niece, Katharine, *née* Barton, widow of Lord Halifax; and Mr. and Mrs. Conduitt resided with Newton, when in the town, from their marriage until his death in 1727.*

At Holland House is, or was recently, Hogarth's painting of a performance by children, "at Mr. Conduitt's, in the Mint," of Dryden's "Indian Emperor," before the Duke of Cumberland, in 1731; the picture has portraits of Lady Deloraine and Mrs. Conduitt's only child, afterwards Viscountess Lymington, the Princesses Mary and Louisa, the Duke and Duchess of Richmond, Earl Pomfret, and others. It was engraved by Dodd in 1792.

* See "Newton: his Friend and his Niece." By the late Augustus de Morgan. Edited by his Wife, and his Pupil Arthur Cowper Ranyard. 1885.

NOTES.

IT appears that there is another crisis in the affairs of the Manchester Ship Canal, and that some hundreds of thousands of pounds above the amount contemplated when the Corporation of Manchester came to the rescue of this undertaking are needed. We have consistently protested against the Corporation becoming interested in a speculative commercial undertaking. The Canal will be a public advantage, but only in the way in which any other undertaking, such as a railway, is desirable. The precedent was a bad one, and we cannot regret that already a lesson is being learnt from the action of the Corporation of Manchester. Municipalities have more than enough to do with strictly municipal work. We hope that this instance will be the first and the last in the North of England. In many respects the difficulties of the Canal from other points of view are to be regretted; they throw discredit on those who bring out such undertakings, and prevent others from being begun. The enormous capital embarked in this company is also likely to prevent it from being financially successful when completed.

FROM a letter in the *Times* from Mr. Lewis Angell on the subject of the disfigurement of Somerset House, it appears that there is one person who is "a Fellow of King's College and a Fellow of the Institute of British Architects" who considers it a perfectly natural thing that a national building should be permanently disfigured because a college wants some more class-rooms. We can only regret that any Fellow of the Institute should be found to condone such a piece of barbarism. We do not believe there is any other capital in Europe where a building of the architectural interest and importance of Somerset House would have been allowed to be treated in this manner; and if architects are found to condone such a proceeding, what are we to expect from the general public? Mr. Waterhouse, whose name should have a good deal more weight with the public than that of Mr. Angell, has at all events spoken out strongly enough on the subject in his letter to the *Times* of Monday last.

AN interesting discovery is reported from Rome. A case containing a complete set of tools, belonging to a sculptor in bronze, has been found. The various chisels and graving tools are not of steel, but of an exceedingly hard bronze, a bit of which it is proposed to analyse. The name of the sculptor—Æmilius Faustus—is engraved on each tool. The discovery should certainly throw considerable light on ancient technical procedures. Dr. W. Helbig has sent an account of the discovery to the Académie des Inscriptions at Paris, of which he is corresponding member.

IT is satisfactory to find that the County Council have acquiesced in the proposal of the Vestry of St. Pancras that a large sum should be borrowed on the security of the rates for the purpose of lighting that parish by electricity. There is a good deal to be said in regard to the period over which the repayment of such a sum should be spread, but the fact that an apparatus wears out seems to us a somewhat fallacious argument. Payment to a depreciation fund really in such a case forms part of the annual expenditure, and if this point is attended to the plant may continue serviceable, either in an original or altered form, for years. It was the more important that St. Pancras should not be discouraged in their attempt to light their district well, having regard to the darkness which characterises many London thoroughfares which are nominally lighted. If St. Pancras is, in a reasonable time, well lighted, other districts of the metropolis must follow suit.

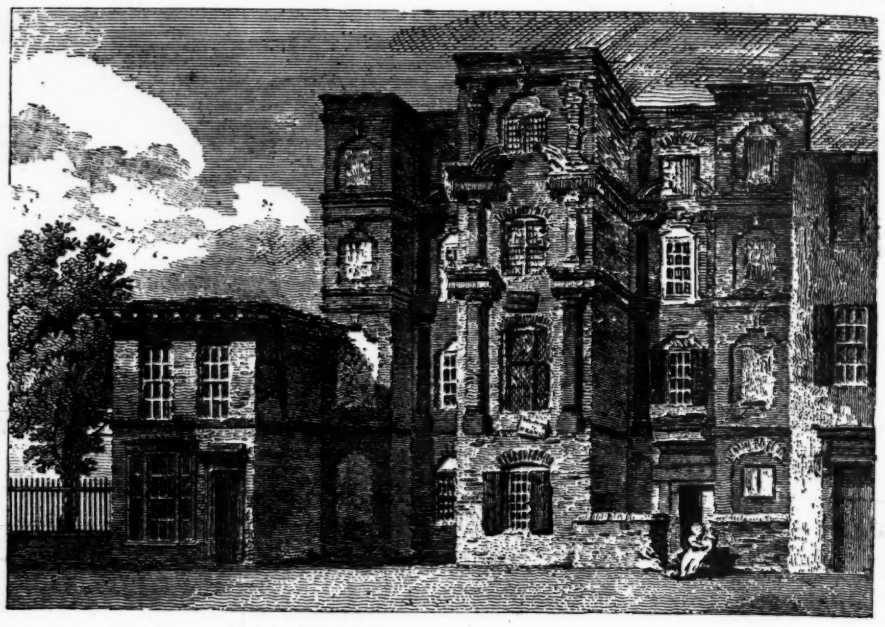
THE correspondence on electric lighting, to which we referred last week, still continues. It has furnished more than one electrical engineer with a gratuitous advertisement, and supplied the *Electrician* with a subject for a leader, in which two questions worthy of note are raised. One, whether two lights identical in colour but differing when tested by a prism are equally good for the eyesight; for example, whether white light composed of red and green only is as healthy as ordinary white light. The other, whether by means of a rotating mirror and a sufficiently delicate photometer any variation in the brightness of a lamp filament, heated by an alternating current, could be detected. The former question, and the kindred one of the effect on the eyes of polarised light, might properly be discussed in the *Lancet*. Respecting the other, it is much like asking whether a sufficiently delicate barometer would detect variations in pressure due to inequalities in the impact of the aërial molecules. The word "sufficiently" begs the question; there is no doubt that a filament must begin to cool when there is no current in it, and that a rotating mirror whose period synchronised with that of the current would enable us to compare the light given out in different phases, but there is great doubt whether there exists any photometer which would show the minute differences which must exist. Turning to the correspondence itself, we find a vain endeavour on the part of "Counsel" to bring back the discussion to the practical question of placing and screening the light, and a wonderful suggestion from Mr. McHardy that "the electric lamp produces,

in addition to the rays which give light, other rays which strike the eye with a rapidity so far in excess of the above that they cause great pain to the eye if allowed to strike on the retina." Were this the case, daylight, which is far richer in waves of short period, would soon blind us.

IN a graceful speech on the occasion of the presentation of Sir W. Thomson's portrait to the University of Glasgow, Mr. Balfour called attention to the fact that while Sir William is "in the very first rank of living inventors," his mind "moves with even greater ease in the regions of speculative reasoning." On the same day, Sir E. J. Reed, speaking of engineering, urged on his hearers that "the study of theories,—of all kinds of theories,—was indispensable; but no engineer must take the validity of formulæ on trust if he desired to be the master, not the servant, of his profession." When a prominent technical paper tells its readers that imperfect theory is no disadvantage to an electrical engineer, that theoretical electricians are as plentiful as blackberries, and the men who can wire a house without supervision are scarce, it is well to be reminded by one of the foremost statesmen of the day, that our foremost inventor is also one of our foremost theorists; and by an engineer of Sir E. J. Reed's standing, that a competent engineer must be a capable critic of the formulæ which he has to make use of.

SIR GEORGE REID, the newly-elected President of the Royal Scottish Academy, seems to be taking a wide and liberal view of the duties assigned to him, and exhibiting a desire to carry them out in no perfunctory manner. At the first meeting of the Academy under the new charter, over which he presided, he reminded the members, amongst other things, that the Academy was composed of painters, sculptors, and architects, and that sufficient recognition and encouragement had not been given by them to the art of architecture, and expressed an opinion that at the ensuing election some members of that profession should be elected as associates. The names of several prominent architects in Edinburgh and Glasgow are mentioned as being likely to receive a sufficient number of votes, and it is probable that two or more of them may be elected. We understand that the President, in the exercise of the hospitality incident to his position, is to inaugurate a new departure by inviting to dinner the students attending the life class. The annual exhibition of the Academy is to be opened this month in place of in February, as formerly, and it is to be inaugurated by a reception, the usual opening dinner being dispensed with.

THE Dean Bridge which spans the picturesque valley of the Water of Leith, on the Queensferry-road, Edinburgh, has been the scene of several suicides by persons throwing themselves over the parapet into the deep gorge through which the stream flows. From time to time it has been urged upon the municipal authorities that means should be adopted to prevent the recurrence of such events by making it impossible to surmount the parapet. Every project hitherto advanced has been rejected as likely to be detrimental to the æsthetic effect of the bridge, which is considered a very graceful production. At a recent meeting of the Streets and Building Committee of the Town Council, Mr. Robert Morham, the City Superintendent, submitted a plan showing a simple style of light railing, rising to a height of 3 ft. and carrying sharp-pointed spurs, and having ornamental mains at intervals. With the view of assisting the committee to come to a decision on the subject, Mr. Morham was instructed to cause a short sketch of the railing to be erected on the parapet. As a matter of general principle, we think it is open to question whether we are morally called upon to spoil architectural monuments or picturesque scenery because some few persons are weak enough to seize opportunities of committing suicide. If we are to adopt that principle, where are we to stop? There have been a certain number of suicides, or attempted suicides, off the Thames bridges. Are we therefore to disfigure such structures as London Bridge and Waterloo Bridge by lofty spiked railings on the parapets?



"*The Templars*": *Ancient House at Hackney.*
(*From an engraving dated* 1805.)

HACKNEY MARSH, for which, as Lammas-land, the London County Council have agreed, as we reported the week before last, to offer 50,000*l.*, subject to a contribution of 16,000*l.* by the District Board, consists of a reduced area of 337 acres, north and south of Lea Bridge-road, and between the river Lea and old Hackney Brook, now a sewer, the southern slip being known as South Millfield. Temple Mills, close by, were so named it is supposed from the manor, once portion of the Bishop of London's Stepney estate, having belonged to the Templars, from whom it passed to the Knights Hospitaler of St. John of Jerusalem. The "Priory" in Well-street, and the "Templars' House" in Church-street, used to be pointed out as the Knights' habitations. The latter,* demolished in 1825, had been built in a quasi-Renaissance style, with three upper stories having Ionic pilasters carrying entablatures and broken pediments,—the pilasters in the attic story taking a terminal shape (see cut). In the middle of last century it was converted into a tavern by sign of the "Blue Posts," and then of "Bob's Hall"; but Dr. Robinson says he could learn nothing of its earlier history. Robert Davies's survey of the Marshes, made in 1745, was deposited in the British Museum. Amongst the then owners were F. J. Tyssen, 72 acres; the Dean of St. Paul's, 8 acres; St. Thomas's Hospital, 14 acres; Hackney Poor, 29½ acres; New Poor of Aldgate, 36 acres, &c. The present lord of the united manors, Mr. W. Amherst-Tyssen-Amherst, M.P., enjoys, we gather, together with his copyholders, pasturage rights in summer; The Bishop's, or Lord's, Hold commoners have similar rights in the winter when much of the ground is often flooded. Various Roman remains, such as coins, medals, a stone coffin (9 ft. 7 in. long, enclosing entire skeletons), have been found here, and a stone causeway beneath the Lea Bridge-road. Over against that road's western end stood Brooke, *olim* King's or Temple Manor, House. Its many famous residents included Lady Margaret Percy, the reputed "nut-brown maid" of the ballad; her brother Henry Percy, sixth Earl of Northumberland, who was buried, 1537, in the old parish church of St. Augustine; Henry Carey, Lord Hunsdon; and Fulke Greville, Lord Brooke. Evelyn records his visit here on May 8, 1654, "to see my Lady Brooke's garden, which was one of the neatest and most celebrated in England." The house he calls "but a despicable building," an account somewhat at variance with that in the "Beauties of England and Wales," and with a curious inventory of all its contents and fittings, room by room, made *temp.* James I. There is a view in the local Tyssen Library. Of late years Hackney has benefited by the opening of various recreation-grounds. On August 13, 1884, St. Peter's churchyard, Hackney-road, was thrown open to the public, mainly by instrumentality of the Kyrle Society; on May 4, 1885, St. John's churchyard, by the Metropolitan Public Garden Association; on October 17, 1885, St. John's, Well-street, by the Local Board and the late Metropolitan Board of Works; and West Hackney churchyard, by the Local Board and the Association; and on May 12, 1888, by the District Board, the late Board of Works, and the Association, the Nonconformists' burial-ground in Mare-street, acquired from the Palmer Trustees under the Open Spaces Act of 1881. On 21st ult. we stated that Messrs. Spalding & Cross's plans are selected, on competition, for a Congregational Church and school-hall adjoining Hackney College, Finchley-road. That college was opened in 1887, having been established in Well-street, Hackney, in connexion with the "Village Itinerary," founded in 1796. It was decided to alter the old college into an auxiliary workhouse, under the directions of Messrs. A. & C. Harston, architects, upon Messrs. Barrett & Power's tender of 2,970*l.* for the works.

* See the plates in the *European Magazine*, April, 1805; and Dr. Robinson's "Hackney," 1842.

A PRACTICAL attempt is to be made to provide a County Museum for Buckinghamshire at Aylesbury, a meeting for this purpose having been held last week. Public attention was directed to this subject some time ago, and though this will not be the first museum of its kind, the attempt will be watched with interest. The county of Buckingham is an important one, but Aylesbury is a small town in a purely agricultural district. If the museum is established, and is found to be successful and useful, it will form a precedent for attempts in similar places.

THE exhibition of the Society of Painters in Water-Colours is a very good one, though we miss the name of Mr. A. Hunt

from among the exhibitors, and Mrs. Allingham is not so well represented as usual. Her "Fairy Bridges, Bundoran" (54,—the title refers to a natural arch in the foreground rocks) is specially interesting, however, as a sea-painting, a subject not usual with her. Mr. Thorne Waite sends a number of long low studies in landscape, which have a little sameness of effect, but include some fine suggestions, as in "Storm Clouds" (24), and "Barley Field, Aldborough" (317). Mr. Tom Lloyd's "In early Spring" (12) shows a little of what seems a trick of effect in the introduction of a warm yellowish tone as a background or edging to the thin foliage, which is intended we presume to create an aërial effect, but is rather prominent to the eye and gives a look of unreality: his "Showery Weather" (28) is a fine treatment of a subject presenting much technical difficulty. Mr. Albert Goodwin's various delicate sketches of English towns and villages are beautiful little works, mostly lightly sketched, studies rather than finished drawings, which after all is what the winter exhibition professes to consist of. The view of "Bristol" (70) is given by night, perhaps a little too blue in effect. Mr. Lawrence Bullied's heads of "Daphne" and "Psyche" (66, 76), and some others of similar type, are very pretty classicalities. Mr. E. R. Hughes "Dealings with the Fairies" (108), a child reading by a window, is an exquisite piece of water-colour painting, as well in accessories as in the face and figure. Among landscapes may be specially mentioned (besides those already named) Mr. Colin B. Phillip's fine and impressive "Ben Nins from the Sand dunes of Machrie" (100), Mr. Eyre Walker's "Helton Dale Beck" (102), Mr. John Parker's "Homewards, Guernsey" (143) one of the best things he has done; Mr. H. Marshall's "Chiswick backwater" (156), in which however the surfaces intended for wet mud do not entirely explain themselves; Mrs. Allingham's "Old Houses, Northend" (198); Mr. Charles Gregory's "Surrey Homes" (251) and "A Sheltered Vale" (262), the latter a remarkable study of river vegetation; and Mr. Wilmot Pilsbury's "Far Away from Toil and Trouble" (299), a most exact study of a country farmhouse and its surroundings. The exhibition contains a good many more or less architectural subjects, among which are Mr. E. Goodall's two Venetian views (4 and 11), Mr. S. J. Hodson's "Piazza Erbe, Verona" (16), Mr. Henry Wallis's "Temple of Neptune, Pæstum" (18), in which by the way the pediment is somewhat out of perspective; Mr. Rooke's various carefully-studied street views in the picturesque old town of Lisieux; the late Mr. Naftel's "Pæstum" (39); Sir Oswald Brierley's "Venice, Early Morning" (48); Mr. Herbert Marshall's admirably real view in "Lincoln's Inn Fields" (80); Mr. S. J. Hodson's "Poultry Cross, Salisbury" (92) and "Pulpit, Trèves Cathedral" (109), &c. Mr. R. W. Allan has some brilliant Indian sketches in his original and striking style, and Mr. Charles E. Fripp continues to illustrate Japanese scenes in carefully studied drawings. One of the most notable works in the room is that of the impressionist member, Mr. Melville, "The Sultan's Escort" (58), a twilight scene in which the background is nearly filled with the irregular masses of a long castellated building, apparently a mass of purple shadow; but as we look at it details seem to detach themselves in the darkness, and against the central and bluest mass of shadow a crimson banner gives the central point of colour. The foreground is left as if unfinished, and the whole style of the thing is odd and *hors ligne*, but it is a most remarkable piece of poetry in colour. Before quitting the exhibition we should call attention to Sir John Gilbert's fine half-length, "Belinda" (182), a female characterisation of great power and nobility; to the fine and interesting series of studies for figures and drapery by Mr. Burne Jones; and to Mr. Henry Wallis's brilliant studies from Persian lustre ware.

TO-DAY is the hundredth anniversary of Mozart's death. On December 6, 1791, he was buried in the graveyard of St. Mark, Vienna, without any stone being placed to mark the spot of his interment. On December 5, 1859, was unveiled Hans Gasser's monument, which the city of Vienna erected in the churchyard. Inasmuch as the places of his sojourn in London are not given in the guide-books, it may not be amiss to mention them here. In July, 1763, Leopold Mozart obtained leave to quit Salzburg with his two children, Wolfgang and Maria Anna, (the "Nannerl" of her brother's letters), for a prolonged tour. Having visited Munich and Paris, they arrived in England on April 10, 1764. Their first lodgings in London were at Cecil-court, between St. Martin's-lane and Charing-cross-road, of which the last remaining houses were pulled down some months ago. In that same year the family lodged also at Williamson's, in Frith-street, Soho; and with Dr. Randal, in the Five-fields,—now Lower Ebury-street, Pimlico, where Mozart composed his first Symphony, and was visited by Daines Barrington, who wrote a paper, printed in the Royal Society's Philosophical Transactions, upon the children's genius. The brother and sister gave their first concert, in public, on June 5, in the Great Concert-room, Spring-gardens. In the following year we hear of them as holding private audiences at the "Swan and Hoop," Cornhill, where they used to play from twelve to three, the father charging 2s. 6d. for a ticket. In May they gave a concert in Hickford's Rooms, Brewer-street, Golden-square, announced thus:—

"For the benefit of Miss Mozart, of thirteen, and Master Mozart, of eight years of age, prodigies of Nature, a concert of music, with all the overtures of this little boy's own composition."

The Mozarts went again to Dr. Randal's, and in August of this year (1765) they left England for Flanders, The Hague, and Amsterdam.

LETTER FROM PARIS.

THE decorative work at the Hôtel de Ville progresses, though with a prudent deliberation, and visitors picking their way through the medley of scaffolding with which the building is now filled can already form some idea in advance of what the aspect of the interior will be when the whole scheme of decoration is completed. Those who are interested in artistic subjects and have given some thought to them will feel a certain surprise at the abrogation of all idea of artistic unity in this work, which has been divided among no fewer than ninety-two different artists; and it must be felt that the Hôtel de Ville will be a museum of art rather than anything else, when we consider this curious juxtaposition of work by men of such diverse styles and talents.

Unfortunately the artists persist in executing the work in their studios instead of in their place and under the conditions of light in which they must be seen. From this system there result serious mistakes in treatment, which might have been easily avoided. Thus the large composition by M. Puvis de Chavannes, "L'Eté," which has been already seen in the Champ de Mars Salon, and which at a certain distance has a fine harmony of effect, is quite altered in the narrow room in which it has been fixed, and the landscape and the trees in the background form a sombre mass which quite crushes the figures. M. Laurens' painting of the "Voûte d'acier," on the contrary, which in the Salon exhibition appeared hard and dry in texture, gains very much on being fixed in its place, where the subdued light tones down its hardness and brings out more effectively the principal group. M. Besnard's ceiling, which had so odd an appearance in the exhibition, has also gained very much in effect in its final situation. The dominant blue colour is toned down in the framework of a ceiling highly charged with gilding, the figures are lightened up and for the first time show their real merit in design. The composition remains an odd one; but if it is desired to have specimens of all styles in the Hôtel de Ville, this is no doubt a very interesting one.

The painting by M. Gervex, representing "Music" is in its place in the highly-enriched ceiling of the Salle des Fêtes, covered with gold and ornaments designed with much taste by M. Giffard. But the artist had not taken into account the great height of the room, which makes the figures appear far too small. The three cupolas treated by M. Henry Lévy are very graceful in design and effect. In the "Salons à Arcades" M. Cormon has already completed two long friezes, in which the "Histoire de Lettres" is illustrated from the earliest times to the present day, from the sands of Egypt to the asphalt of the Paris Boulevards, from the first press of Gutenberg to the kiosks where modern journals are sold. Opposite to a contemporary of the Pharaohs is seen a figure of a "Parisienne" of the most modern type. The oddity of the contrast is the more emphasised by the juxtaposition of the allegorical nudities of MM. Albert Maignan and Urbain Bourgeois.

We must not overlook, in this rapid promenade of the building, the fine escutcheon designs of M. Carrière (which might however be the better for a little more vigour of light and shade), the graceful nymphs of M. Clairin, and some pleasing landscapes of the environs of Paris which form an element of the decoration.

It remains now to be seen what artist will be found as a successor in this work to Elie Delaunay, who himself succeeded Baudry in the decoration of the grand staircase. There is talk of M. Puvis de Chavannes; but it is a question whether that artist, habituated only to paint on vertical walls, would succeed equally well with a ceiling. It is to be feared that recourse may be had to competition, which has not so far produced very satisfactory results. Competitions of this kind are chiefly valuable as furnishing experience, not always of the most conclusive kind. It is perhaps with this kind of object that the Union Centrale des Arts Décoratifs has instituted some competitions to excite the emulation of those artists who are specially interested in decorative design. These are for electric lighting chandeliers and for the furniture of a dining-room. The first of these competitions has not however produced anything original or worthy of note; it is understood that a second competition in this branch of work will be opened. The furniture competition is better in regard to the style of the designs and the execution of the drawings, but neither does this offer any new ideas, the competitors having contented themselves within the circle of existing styles. The jury have however awarded a first prize to the design of M. George Rémon, and a second one to M. Paul Laffoly. It is to be hoped that the Union Centrale will be more fortunate with the large exhibition of industrial art which it intends to organise in the latter part of the year 1892, at Palais de l'Industrie, and which will be entitled "Exposition des Arts pour la Femme." This exhibition, of a kind entirely new, will be international, and will include both ancient and modern work.

It is because the works executed in the State manufactories also want novelty and originality that M. Galland has declined any longer to occupy the place of director of art-work at the Gobelins, which he has occupied for five years past. The Minister has been very unwilling to accept his resignation, which is given on the ground that the productions of the manufactory are no more than lifeless academic compositions which seem to have no aim except to imitate the processes of painting. This is a new charge against the spirit of the State manufactories, arising from the same causes which probably operated in inducing M. Bracquemard to decline the analogous office in connexion with the establishment at Sèvres.

The Service des Bâtiments Civils seems at last about to wake up a little from its long inactivity, so far as can be indicated at least by its demand for a vote of 985,000 francs for various urgently-needed works. The demand has however been subjected to a detailed investigation as to the manner in which the money is to be used, which has not been altogether favourable in its results. In the Budget 200,000 francs figures for the work at the Hôtel de Chimay, now an annexe of the Ecole des Beaux-Arts; 65,000 francs are proposed for the completion of the Jardin du Carrousel; the repair of the Palace at Versailles demands 270,000, which M. Proust proposes to reduce to 170,000, making a violent criticism on the works executed for the last twenty years, which have cost six million francs, and which, according to M. Proust, have done irreparable injury to the style and appearance of the palace.

M. Proust is often unjust in regard to the Government architects, who are made responsible for every mistake, while in fact they are often bandied about this way and that between two Ministries, sent by turns from the Beaux-Arts to the Travaux Publics and *vice versâ*, and are at the mercy of administrative offices to whose orders they are obliged to conform under pain of being ignominiously dismissed, as was M. Coquart the other day, as if they were unfaithful or incapable servants, and without even the opportunity of justifying themselves.

The unfortunate architects have for some time past been placed pretty often on the stool of repentance in Parliament, partly, it has been said, to draw M. Trélat, who has recently become a Deputy. The Minister of Fine Arts has also not been backward in the defence of his auxiliaries the architects, and in regard to the charge of waste of funds he maintains that if estimates have been exceeded by Government architects in some cases, in other cases the expenditure has been below the estimates. A notable instance is that of the Lycée Molière, built by Vaudremer, where the estimate was two million francs and the expenditure only amounted to 1,800,000.

While speaking of Parliament in its relation to art, we may mention a petition which has been sent to the Chamber of Deputies, the object of which is to secure to the descendants of an artist a proportion of the profits arising from the increased value of his works, instead of leaving such value to flow into the pockets of picture dealers. However just and righteous such an arrangement would be, it is to be feared that the petition will be rejected, in consequence of the difficulty of arranging such legislation on any practical or business basis. Examples of the evil of the present state of things are numerous enough; a prominent one is the case of Millet, who, after a life of struggle, died in the greatest poverty, and left his widow and children in distress, while pictures of his are now selling at half-a-million francs. And many other such cases could be cited. It is miserable to think of the direct descendants of a great artist dying of want, while his works are enriching a parcel of middlemen who feast like crows on his carcase.

The Académie des Beaux-Arts met last Saturday for the election of a successor to Delaunay in the section of painting. The number of votes was 35, and at the first voting M. Jules Lefebvre obtained 24 votes against 4 to M. Joseph Blanc, 3 to M. Aimé Morot, and 2 each to MM. Détaille and Olivier Merson. M. Lefebvre is therefore at last elected a member of the Institut, after successive disappointments which caused surprise everywhere. The new Academician is 57 years of age; he was born at Tournan, and studied painting first at the school at Amiens. He then entered the atelier of Léon Coignet, and made his *début* in the *Salon* of 1855. In 1851, his "Mort de Priam" obtained him the Grand Prix de Rome. Since then he has regularly exhibited at the Champs Elysées a series of remarkable works. Among the best-known of his pictures are "Mignon," "Le Rève," "La Vérité," "Madeleine," "Diane Surprisé," "Pandore," &c. The number of honours he has already received, and his unfailing correctness and completeness of execution, justify the choice of the Académie. We may add that M. Lefebvre is adored by his numerous pupils, and is one of the most sought-after among all the teachers and professors in Paris.

M. Lucien Magne has been appointed Professor of Architectural History at the École des Beaux-Arts in place of the late M. A. Lenoir. He is a son of the M. Magne who was one of the most eminent architects of the municipality of Paris, and has already rendered great services to the departments of "Monuments Historiques" and "Edifices Diocésains."

In the Attainville competition, the prize for historical painting has been awarded to M. Crubertin, the prize for landscape to M. Bonis, who has also obtained that for figure-painting. In sculpture the first prize has been awarded to M. Miseray. The first prize in the Bridon competition (sculpture) has been given to M. Roux.

We have to record the sudden death of one of the most eminent professors of the École Centrale des Arts et Manufactures, M. Vigreux, who was only fifty-five at the time of his death. He was the author of some remarkable works on machinery construction, and has left uncompleted a large encyclopædia of engineering.

ROYAL INSTITUTE OF BRITISH ARCHITECTS:

SCULPTURE AND SCULPTORS' METHODS IN RELATION TO ARCHITECTURE.

THE third ordinary general meeting of this Institute for the present session was held on Monday evening last, Mr. J. Macvicar Anderson, President, in the chair.

The minutes of the previous meeting having been confirmed,

The President said that in view of the interesting subject which was to engage their attention that evening, they would all be sorry to learn that Mr. Waterhouse, who had fully intended to be present, was prevented from attending by the death of his brother.

Mr. John Belcher read the first paper of the evening. He said he believed his function was rather to initiate the discussion than to contribute very much to it himself. Architecture and sculpture appealed to similar emotions, for they both dealt primarily with form. A building, imposing in mass and stately in outline, might, by its solemnity, powerfully and seriously impress the beholder; but when to it were added fitting proportion, the poetry and grace of sculpture, and the subtle charms of colour, it would excite still higher and stronger emotions. Architecture had the advantage of being able to bring into practical and intimate union with herself all the arts, but it was obvious that the closest tie of all subsisted between architecture and sculpture. He had on previous occasions advocated the cause of sculpture as allied with architecture, and he was glad to have the present opportunity of welcoming the co-operation of sculptors. He had no desire, even if it were necessary and he had the ability, to deliver a panegyric on sculpture, or to dilate upon the magnificent independence of architecture. He wished merely to offer a few practical suggestions which were the outcome of his own experience or observation. They were there as students, and he thought that much good would come from such gatherings as that, when they were met to hear the suggestions of their sculptor friends. He thought it might be taken as an abstract proposition that architecture would gain in value when associated with sculpture. But how was that association of the two arts to be brought about? Opportunities were so rare that when they occurred one hardly knew how to take advantage of them. In the present grinding, mercenary age, when clients expected so much for their money, sculpture seemed often to be quite out of the question,—a luxury which the mere utilitarian aspect of the building would not allow. Then it was said that sculptors were so unreasonable,—that their works were so costly. Here we were face to face with the initial difficulty. No doubt there were faults on both sides. These difficulties could only be rectified by a little more intercourse between architects and sculptors; the latter, he felt sure, would endeavour to meet the sculptors half-way. One means of securing a good result would be for the architect to associate a sculptor with himself early in the history of the work: the sculpture should not be left merely to manipulate sundry blocks left for carving, and his work should not be regarded merely as a means of obtaining variety of surface-texture and diversity of sky-line, for such was not the proper function of sculpture. If the sculptor were taken early into consultation he would be able, if he rightly appreciated architecture, to give expression to the purpose and object of the building, to emphasise its character, and to animate it with life and beauty. When sculpture thus became an integral part of the whole design, clients were more likely to value its significance and importance: if it were left to be added later on (if funds permitted) and treated as applied art, it was sure to be in the end curtailed, or perhaps omitted altogether, from motives of economy. Sculpture had a higher function that the production of effigies; its proper function consisted in the expression of allegorical ideas and in the commemoration of noble deeds. In friezes, panels, pediments, entrance doorways, what a wide range there was for the sculptor's art! If they could not always have quantity, let them be content with quality. Our buildings would gain in dignity and beauty if, instead of being covered with meretricious ornament or meaningless enrichments, the interest were concentrated upon a few square feet of sculptor's work, after the manner of certain old Spanish and Genoese buildings. He by no means wished to imply that a building should be a mere background for the display of sculpture; but it might illustrate the value of the contrast between sculptured ornament and plain wall-space. It was absolutely essential, he thought, that when sculpture was allied with architecture, that it should be subordinate. It should interest by hinting at the purpose of the building or by concentrating attention on its dominant motive. It was not necessary that it should be of a highly-finished character, like statues or other pedestal work, which occupied the same relative position as the easel-work of the painter did to fresco-work. It should be broad in treatment and as pure and simple in outline as possible. There was an impression that as we in this country had little sunshine, all modelling should be in high relief, but the effect of cutting up every inch of surface was only to increase the gloom. Coarse and bulbous work had a tendency to hold the dirt and sooty particles of the atmosphere. Work in low relief on plane surfaces, on the other hand, caught and radiated the light. It should, of course, be the sculptor's aim to reflect rather than to absorb the light. Large mouldings and coarse carvings did not necessarily impress or give grandeur of effect, but with the aid of the sculptor largeness of scale could be obtained, for the human figure furnished the eye with an accustomed scale of comparison. But for that reason sculptured figures required careful adjustment, for if exaggerated they would reduce the apparent size of the building. When introduced into a frieze, they should be treated as a continuous band encircling the building. To obtain a proper effect they must have a geometrical treatment similar to that of the frieze of the Parthenon. There was a rectangular character in the forms of the Parthenon frieze which was in harmony with the rectangular lines of the architecture. In conclusion, Mr. Belcher said he had only just hinted at a few of the many ways in which sculpture might be made so valuable and so helpful to architecture, and he was convinced that it was only by the hearty co-operation of sculptors with architects that a new departure should be looked for, and that they would be able to realise the words of the greatest architect and sculptor who ever lived, that "there is but one art."

Mr. W. S. Frith read the second paper on the subject. He said that the subject for discussion that evening, as he understood it, directly necessitated reference to their old friend, the question whether sculpture should be used in architecture at all, as questions bearing on that point were sure to arise whenever artistic considerations were involved with scientific ones, as in architecture, in which the respective functions of art and science were necessarily entangled and woven together so that a resulting sum of effect might be presented. That sum of effect, as presented in all great periods of architecture, always had as one ingredient sculpture. There was no lack of examples, in all periods and styles, of variety of treatment and design. What difficulty there was rather consisted in understanding rightly the lessons conveyed by those works. How great was the number of effects which had been contributed by that phase of art! It must be remembered that it was but one phase of sculpture, which in the abstract meant the study and treatment of whatever was beautiful or interesting in form in living nature, and which could be appropriately produced in the solid, the cultivation of the faculty of form, and the using it to enlarge knowledge in the right enjoyment of beauty of form, and combinations of form. While, however, in the abstract sculpture was distinct from architecture, in practice all sculpture, except that of the fragmentary or gallery order, was in intimate contact with it. In the case of pedestal statues the pedestal should, of course, be designed to harmonise with the statue, and not the statue with the pedestal. In monuments, architecture should always co-operate in producing the impressiveness required, for, in any large structure, unless the architecture conformed to the sculpture the result would be unsatisfactory. Sculpture, properly used, would enhance the effects of light and shadow, now too often exclusively given by mouldings, just as mouldings themselves added to the light and shadow of wall-surfaces. Moreover, the sculpture could be used to illustrate the purposes of a

building, and generally to contribute to its impressiveness and beauty. To effect that object the sculptor was debarred from using haphazard schemes, it being necessary for him to use such as the position prescribed. That his ideas were beautiful was not sufficient; they must be fitting. An independent work having no limiting space to occupy might project in any direction the artist pleases, might be of whatever general shape and however irregular, so long as it expressed what was intended, and was sufficiently beautiful to justify production. Applied to architecture, it had to fill, and properly fill, a prescribed space, and look unconstrained there; it could only have the amount of relief and space arranged for, and must within that limit fulfil its functions. In gallery sculpture the eye could select the distance and position it found most enjoyable, while in architectural work the work must be executed to please the eye at prescribed distances and elevations where no change of position available to the observer could substantially change the operations of the optical laws ruling the appearance of objects at a distance. The foreshortening caused by elevation was a difficult matter to deal with, especially as the eye was extremely sensitive as to the vertical plane. Gothic sculptors, in their seated figures, showed a clear knowledge of foreshortening; these were carved in an almost standing position, the thighs being short and at an obtuse angle to the body and legs, instead of being at right-angles, a figure having which position was likely, if placed at a height, to appear to have its head growing from between its knees. The affinity of masonry to carving and sculpture was in these days somewhat overlooked, yet masonry mouldings must necessarily be produced by carving, though with the help of straight-edge and moulds. He thought, however, the time often arrived when those implements were better taken away and the mason taught to use his eyes, since it was mainly to gratify the eye he cut at all. Between masonry and the simpler forms of carving, and from thence to the most elaborate and highest sculpture, there was a series of links that formed a gradation in cutting from severe restraint to complete freedom. In that gradation, masonry dealt with the actual structure as ruled by the laws of gravitation, but was carried forward into the working out of what the structure required, not for physical reasons, but to gratify that æsthetic requirement of seeing and feeling a beautiful and expressive structure which was the distinctive reason for the existence of the art of architecture as distinct from building or engineering. In performing its functions, masonry began the scheme of light and shade, but with forms severely restrained, and more or less geometrical in character, not imitative of living nature,—which scheme of light and shade was carried on by the use of forms founded on or imitative of nature, or of an illustrative character. With reference to the decorative, he thought the weaving of this into the structure so that one feels it to be a necessary portion of the whole was probably the first requirement; next to which and contributing to that end was the question of the scale of light and shade,—the determining factor in which was the size and intensity of the various planes of light and shade which the carving presented; unless these were of the right artistic value, chording with the scale of the structure, architectural effect was lost and discord produced: the masonry scale and the carving were quarrelling instead of being helpful to each other. That was the special point upon which the greater number of mistakes were made; the mechanic let this happen as it would and asked no questions: the artist controlled the occurrence and found means to make it right. It was only fair to say that the conditions under which such work was executed in London rendered it very difficult to be sure on that point; the buildings being covered with hoardings prevented the work being seen during execution, besides the usual necessity for a scaffold to be removed at the earliest possible moment. It was a matter which certainly deserved serious attention. It was by means of these planes of light and shade that form was presented to the eye, and the design appeared in rhythmical sequence of line and mass; and in that the fund of beautiful things and thoughts which the artist had at his disposal was displayed; it was for that that the abstract study of sculpture was necessary as well to the architectural as to the gallery phase of the art. It afforded the sculptor the means of expressing his sympathy with architecture, the lack of which caused the striking of those jarring notes which confused the mind and discredited the art. It was of the greatest importance that the production of fresh work should be promoted. A great deal had been done in that direction recently by architects, many of whom had devoted much time and ability to producing fresh designs for carving. But the place to design was in the actual material, if we were to have really competent sculpture. In going to nature for inspiration (the natural fountain-head for fresh ideas), there was a tendency to adopt what might be called the natural in a crude form, and it was questionable if there were many positions in which the direct and realistic representation,—of natural foliage, for instance,—was altogether satisfactory; even in swags of flowers and fruit some treatment was necessary, and then the work was rather overlaid on than belonging to the structure. In work having that character, no doubt greater freedom was allowable than in these which concerned the structure; and figure-work came under the same rule, as in the case of niche figures, where there was the opportunity of treatment in niche and canopy, of sufficiently isolating or connecting the effect; and finial figures also might permit of considerable freedom,—in both cases, of course, within certain limits. In panels there was always the opportunity, by putting the work properly in relief, or by other means, of securing the right feeling of cohesion; but there was a danger in that case,—these being practically complete works in themselves,—of the sculptor becoming so absorbed in their details that he forgot that the panel belonged to the building. With the exception of Renaissance and kindred styles, where a large use was made of figure-work purely decorative, the leading motive of the great mass of figure-sculpture was of the nature of illustration, which might perhaps be called the literary side of the art,—a making of permanent records of events or thoughts to instruct or remind, as in Egyptian and Assyrian and in Gothic; while in Greek and Renaissance, and perhaps to a less perfect degree in Gothic, the working-out of that was combined with a desire to please the optical sense by so treating their figures and obtaining light and shade effect as to make it a powerful contribution to the expression of their buildings. The cornice placed in the same room that contained the Tomb of Mausolus at the British Museum gave some idea of what simple light and shade effect was capable of: how the artistic handling of the units of construction so presented the work that neither construction nor decoration was obtrusively assertive, but both combined in giving an expression of refined dignity. The amount of treatment necessary was a very difficult question, largely depending on circumstances and traditions of styles; but all quite satisfactory work was in some way treated; the panel by Ghiberti in the font of Siena Cathedral was a beautiful example of treatment in the way in which the whole work is produced by planes large in proportion to the figures, but just sufficient to bring it into scale and harmony with the whole work. The treatment of the Parthenon sculptures was admirably disguised, but, slight as it appeared, it was sufficient to secure the effect of indisputably belonging to the building; and in the metopes the treatment of form was carried out to make them look right from below. That, the grandest illustration of sculpture in relation to architecture, showed that it was executed with full knowledge of the requirements and beauties of both architecture and sculpture; it was the highest sculpture existing, and conformed to its position without apparent effort; and there was no reason, except the want of knowledge, to prevent sculpture in the present day from equally contributing to the same beauty and enjoying the same dignity which the acceptance of that orderly liberty secured.

Mr. T. Stirling Lee, who read the third paper, said that in accepting the invitation of the Art Committee to read a paper on sculptors' methods in relation to architecture he felt that it was an indication, and a very practical one, that the members of the Institute, as a body of architects, were sincerely desirous of elevating sculpture to its proper position, and welcoming her home into the family of architecture. They would find sculptors ever ready and willing to join them in making the mutual home beautiful. He was apprenticed to an architectural sculptor, so-called, in days he hoped which had passed, for he looked for the time when the distinguishing epithets of "architectural sculptor" or "figure sculptor" would no longer exist, and that sculptors would all be able to enrich architecture, and be, in the most complete sense of the word, sculptors. What had sculptors to do when an architect sent them a drawing, or had a conversation about some work? No doubt the first question on having seen the design was what would it cost to do? If the work were worth doing, and the opportunity were one on which he could put forth his best efforts, the young sculptor would be found enthusiastic enough in his art to meet the architect, and it would not be the cost which would be a stumbling-block. So that the oft-repeated excuse of expense did not always hold good; and this the work of the late J. D. Sedding confirmed. In a meeting such as that the sculptors could not withhold a tribute to the memory of one who had done so much to elevate sculpture combined with architecture. Having touched upon that most important point of cost, the sculptor took the design home, there to think out the subject: what was the use and purpose of the building? He no longer turned up books and photographs, or consulted museums for something that had been done before and would fit in, but worked out his subject for himself. The sculptor of the present day was generally well trained; his artistic nature more or less developed, his faculty of taste, which could be his only true guide, cultivated by the more intimate relations now existing between the arts, enabled him to compose and be himself. If flowers or birds suggested themselves, with their beauty, meaning, and characteristics; or animals,—here his knowledge of the organic world gave him his subject,—each having their own figurative language, speaking in their own symbolic tongue to all who could read them; or, it might be, he selected the human figure, with all its attributes. Having worked out clearly what he wished to tell the world of its beauty and thoughts read in their outward and visible surroundings, he took his pencil and paper, and composed the lines of his subject, considering and bearing in mind the architecture, to be in harmony with his fellow-workers,—with no envy or desire to out-sing his brother-artist, but to feel that they were indeed one, for he knew that to be in keeping was the greatest gain to himself, and the best shrine for the work of his hands. How beautiful that study of line was could not be quite clearly understood without the most intimate knowledge and study of the human form, its continued and never-ending flow. So it was in everything in nature, but brought home most clearly in the study of man,—from head to toe, from feet, legs, body, neck, head, no stopping, no hesitating, but one continuous rhythm, for he was the law of all things, "balance;" and as man was the most perfect illustration of this law, every line and form having its balancing line, so sculptors studied him as their highest ideal, taking him as their guide and principle of design, that their work might carry on the lines of the architecture and be in balance with it. The lines being settled on paper, the sculptor then made a sketch model, with the surrounding moulding run in plaster or built up in wood, for here he was brought to consider the most important point, that was, the study of light and shade, or effect, the neglect of which was the cause of most inharmonious work. The necessity of the study of effect was felt by our Early English masons, whose golden rule was that a mason should always work "to" a moulding, never "by,"—that was, if worked "by," the result must be cold, mechanical, effectiveless; but "to," it would only be right when the effect of the light and shade of the moulding wanted was obtained. The heighth and depth of the relief, the cutting of the drapery, must be entirely governed and controlled by the mouldings; if too deep, the work would be black and spotty; on the other hand, if too flat, the effect would be thin and poor. So one felt how great and vital was the question of light and shade, and how essential a complete and true knowledge of the situation and light the work would receive must be. When the sketch was completed, it was as well, whenever possible, to place it in position. Any alteration could at this stage be made, and, what was of the greatest value, the sculptor obtained a complete grasp of what was requisite in his

work. Coming to the methods of executing a work and the materials to use,—clay, plaster, or drawings, or working direct in the stone from the sketch,—Mr. Lee confined himself to stone. The art of sculpture was divided into two classes,—the plastic, or modelled, and the glyptic, or carved. Treating stone, we had to do with the latter, so must consider the laws that governed that material. The subject being the human figure, and the material in which it was to be executed stone, they must recognise that they had two scientific laws to consider,—the science of anatomy (the interior law of man) and the science of geometry (or the exterior law of the material). If influenced more by one than the other the result would be more realistic or architectonic; so, should it be worked entirely on the plastic laws, the result would be incongruous and out of keeping with the architecture; so also, if the work were the result of masonic laws without much knowledge of the human figure it would be primitive and lacking in form; but when placed on a building it would be far more satisfactory and harmonious than the realistic production. So he felt that, with all our knowledge and wonderful technique in clay, it was dangerous when used for the preparation of stone. In relief-work he took paper and pencil and drew his figures on the geometrical principle of planes, as if he were carving direct, for should one work on any other principle in carving he would find himself very probably in a hopeless mess. He then traced the drawing on to the plaster and carved his model. So one worked on true and scientific glyptic lines; the stone, pointed from the model, could then be taken up and finished. Sculpture worked on that method and associated with architecture was but the highest form of masonry, and the perfection of the work would depend on the sculptor's knowledge of form and feeling contained in geometrical or architectonic planes. After a few words on the selection of lines in drapery, Mr. Lee concluded by saying that while to study painting was of the greatest value to the sculptor in his knowledge of colour and effect, he felt that the study of architecture was of the most vital importance if his work was to have the greatest charm and solemn grandeur by its architectonic dignity and repose.

The President having invited discussion,

Mr. George Simonds, in opening the discussion, said that the subject was one in which he naturally took a very great interest. From the excellent papers which had been read that evening and from what had been said in other places, he thought there was very little doubt that architects and sculptors had pretty generally come to the conclusion that if they were to have once again, and in our own day or in the immediate future, any great period of art, it must be by a combination of the arts.

Mr. H. H. Statham said that although he very much sympathised with what had been said in the three papers they had heard, he was not sure that some of the theories which had been put forward in them were not getting pushed a little too far. There was no doubt, as Mr. Simonds had said, that for a long time past we had had practically three separate arts, pulling three different ways, and that lately we had come to see that there were very important relations subsisting between them which had been neglected; but there was rather a tendency now to speak as if none of the three arts had any power of standing alone or of doing anything without the help of the others. He thought that was a mistake, and that it was unwise that such an idea should be entertained. In the first place, in relation to architecture, he had always maintained that architecture had its own expression and its own poetry, independently of any assistance whatever from sculpture or painting. Sculpture and painting no doubt contained materials of the highest value to architecture, but he maintained that it was an unfair position to put architecture in to say that it was necessarily incomplete without sculpture. Then, again, he was rather surprised, from the sculptors' point of view, that they themselves appeared disposed now to entirely give up the idea that their own best powers could be exercised in works to be seen and considered independently,—works which had been spoken of that evening as pedestal statues. He quite agreed with all that Mr. Stirling Lee had said as to the importance of considering sculpture in reference to its position in the building, which of course had been very much neglected, and as to its being desirable that the sculpture should appear as a part of the architectural design, and should be designed in reference to the mouldings; and the principle had been laid down in one of the papers read, in regard to foliage ornament,—a principle which, of course, all architects had admitted for years past,—that the foliage ornament must be conventionalised into quasi-architectural form. But he was surprised that the sculptors rather passed over what seemed to be a fact,—that in harmonising their sculpture with the building they had necessarily to give up some of the life of their art. Take the sculpture of the Parthenon frieze: that was very much conventionalised sculpture; it was, in fact, decorative. Take the sculpture of the front of Wells Cathedral: it was magnificent in a decorative sense, but if one took the figures separately, they were manifestly somewhat deficient in life; they were architecturised into harmony with the architecture. As to what had been called the pedestal statue, he (the speaker) did not wish to see it cornered and put on one side. Dalou's monument to Delacroix, recently erected in Paris, was a group full of powerful movement—perhaps a little too much movement for sculpture; still it was a very impressive and a very expressive monument; but he could not see how that could be made at all architectural without taking some of the life out of it. It rather seemed to him that the sculptors were now inclined to go too much the other way and to give up some of the life of their own art. Therefore he would put in a plea for sculpture as a poetic art by itself, and for a little consideration for the "pedestal statue." As to the difficulties under which the sculptor worked, and especially the theory that "the scaffold must be removed at the earliest possible moment," he thought that was at the root of what was the damnation of all modern buildings, viz., doing things in a hurry. Good work was not likely to be done so long as people were only building for the sake of securing the money at the earliest possible moment, working night and day to get the building finished; and that was what nine-tenths of modern building was coming to. Another note of interrogation with reference to the Greeks. He was afraid he would be regarded as a terrible scoffer, but he was not sure whether we were not bowing down too blindly to the notion that the Greeks always arranged their sculpture exactly as it should be arranged. He thought the Parthenon frieze the finest piece of architectural sculpture in the world; but was it put in the right place? He had always had a feeling that it was not; one could not have seen that frieze well from the outside of the colonnade. One could stand inside the colonnade and look up at an acute angle to a very highly foreshortened and low relief sculpture, with a roof just over it shutting out the light from it. His impression had always been that that bas-relief was an extraordinary instance of the most beautiful sculpture being partially sacrificed by the place in which it was put; and it was, perhaps, an argument in support of the theory that the Greeks regarded that sculpture more in a decorative light than in a sculptural light. They regarded it, probably, as a band of architectural ornament; but, as sculpture, he thought it must have been very much thrown away to the eye of the ordinary observer; and perhaps we should do just as well not to accept it as a matter of course that the Greeks were entirely right, but to consider whether, if we did or could do anything like it over again, it would not be better to put the sculpture where it could be seen, instead of making it a mere band of ornament in a position where it could not be seen.

Mr. William Woodward thought that it was very much in the hands of architects to persuade their clients to have some good sculpture in their buildings.

Mr. William Young, architect of the new Glasgow Municipal Buildings, described in detail the sculptures with which those buildings were adorned, both externally and internally, and he warmly commended the enlightened spirit of the Glasgow Municipality in liberally employing the sculptor's art. In that respect the Glasgow Municipality had set an example well worth copying by the Government. As a matter of fact, the reason why sculpture was so little employed in this country was that the Government gave no adequate encouragement to its use in our public buildings. Were they to do so, municipalities and other bodies would more generally follow their example, and private persons would imitate the example of the municipalities. He strongly advised every architect designing a building of importance to make sculpture a part of the design, and to insist upon its being executed.

Mr. Conrad Dressler said that it was his conviction that the sculptor's art of the present day suffered, in common with other arts and trades, from the almost general abandonment of the apprenticeship system.

Mr. A. Beresford Pite said he wished to propose a hearty vote of thanks to the readers of the three papers, Messrs. John Belcher, W. S. Frith, and T. Stirling Lee. He would take the opportunity of saying that it was a matter of considerable regret to the Art Standing Committee, which had been making the arrangements for that meeting, that several sculptors of the greatest eminence had announced that it was their intention never to take part in the reading of papers, the delivery of lectures, or in discussions on the subject which had engaged their attention that evening. He thought that if, at all events, two of the gentlemen who had answered the Committee's invitation to be present that night had favoured them with their presence and had known that they were not obliged to take part in the discussion which followed the reading of the papers, they would have changed their opinions as to the utility of such discussions for it was only by the association and free intercourse of sculptors and architects that the progress would be made which had been referred to that evening. The work that was exhibited in the Arts and Crafts Exhibition last year, especially that connected with their late chairman, Mr. J. D. Sedding, proved to them that a very definite start had been made in the proper combination, at all events, of decorative architectual ornament with the work of the sculptor. Perhaps they might say that a few years ago, when the modern reredos was erected in St. Paul's Cathedral, public attention was first drawn to the matter; and whatever difference of opinion might exist about that reredos need not be referred to there. But there was one monument in St. Paul's Cathedral,—an earlier monument, which was the work, not of a sculptor merely, but of a sculptor-architect,—he meant the Wellington Monument,—which proved in perhaps the best possible way,—in a way which none of them could ever hope to see excelled in a generation, or in a century,—how, with perfect freedom and yet with perfect dignity and beauty, an accomplished sculptor could combine architecture with his forms and an accomplished architect could combine sculpture with his orders and features. He hoped that the day was not far distant when on the initiative of the Art Committee or otherwise the Institute would be able to raise a public protest against the undignified position which that monument occupied, and if public attention could be aroused at the proper time to such a very evident misplacement as that of the monument in question, they would all be the gainers. He hoped that they, if they professed to be students, would pray for the advent of another Alfred Stevens, whether he might come from the ranks of architects or sculptors. He could not help thinking that if some of the sculptors would be willing to sacrifice a little for the sake of architecture, and if some of them would take up architecture in combination with sculpture, and if some of the architects would study sculpture, they would have the future architect combined with the future sculptor, producing another Alfred Stevens or, perhaps, even a Michelangelo.

Mr. Phene Spiers, in seconding the vote of thanks, said that any one who had visited the capitals and even the provincial towns of countries abroad, could not fail to be struck with the extraordinary contrast between the sculptural and other decorations which were applied to the public buildings and the decorations which were applied to similar public buildings in London and the provinces. The extraordinary amount of sculpture which was found in almost every public building in Berlin or Paris, or any other of the chief capitals, suggested at once the inquiry how was it that their brethren abroad had their buildings decorated in a better manner than we had. He was afraid that the first cause was that it had always been a recognised fact abroad that art was a luxury which must be paid for, and the various foreign Governments had always recognised that all the arts must be subsidised in some way if a really high standard

was to be attained; and they recognised also that in subsidising the several arts, they were not only adding to the grandeur and commemorating the history of their own countries, but that they were really educating their people. Unfortunately, this view of the subject was not taken by our Government.

Mr. Hugh McLachlan referred to the humidity of our climate and the dirtiness of our town atmosphere as being great hindrances to the larger employment of sculpture.

Mr. F. W. Pomeroy said that as a sculptor he was able to say that the system of apprenticeship had not died out. The Gold Medallists of the Royal Academy for the last four terms had all been apprentices; so had Mr. Stirling Lee and Mr. Frith.

Mr. William White, F.S.A., said that, until sculpture was brought more closely into alliance with architecture, neither the one nor the other would fare as it ought to.

The Chairman having said a few words in summing up the discussion, the vote of thanks was carried, and the authors of the three papers briefly replied.

THE ARCHITECTURAL ASSOCIATION:

THE LATE JOHN D. SEDDING.

THE usual fortnightly meeting of this Association was held on Friday, the 27th ult., in the Meeting-room of the Royal Institute of British Architects. Mr. F. T. Baggallay, President, in the chair.

The minutes having been read and confirmed, the following gentlemen were elected members:—Messrs. W. Furneaux, L. C. Davinière, J. Cartledge, G. Newport, P. Dixon, W. MacKinnon, and D. G. Salier.

Mr. E. S. Gale, senior Honorary Secretary, announced that Mr. Andrew Oliver had notified to the Committee his desire to give a prize for the encouragement of the measuring of old work. The Committee had accepted the offer with thanks, and had referred the matter to the Prizes Sub-Committee. It had been arranged that a first prize of three guineas, and a second prize of two guineas, should be given for the best series of original sketches, measured and plotted to scale on the spot. He proposed a vote of thanks to Mr. Oliver, which was carried by acclamation.

Mr. H. Wilson then read a paper "Concerning John D. Sedding, his work and influence." The author commenced by remarking that if there should be present by any chance any member of the Association who regarded architecture as a business, he had better go away, because he would probably be offended by some very unpleasant things which he (the lecturer) was going to say. He added that the paper was intended rather as an incentive to discussion than as a serious contribution to the history of John D. Sedding. Proceeding with his paper Mr. Wilson said that of the making of books about art there was no end. So many clever men of recent years had written and said so much about art in general, and about architecture in particular, and with so little result, that one might be forgiven for imagining that art was extinct or had altogether perished from amongst us. Yet never was art of a certain kind more widely worshipped or more widely discussed. The word "art" was in everybody's mouth, in nobody's heart. We had "art fabrics," "art furniture," "art ironwork," and, if Mr. William Woodward might be believed, we had also "art architects," whatever that might mean. More than that, we had art congresses, where artists, more or less fashionable, dispensed dainty commonplaces, and where even some great artists had endeavoured to arouse interest and stir the enthusiasm of the British public. But all to no purpose; the only result had been to give the average observer an exaggerated sense of his own importance. He would discourse of the highest things with a volubility far in excess of his knowledge of them. Face to face with facts like these, what remained to us but blank despair? A thick cloud seemed to have settled over art, and we groped blindly after we knew not what. The shining light of beauty only made the general darkness more complete and made the case more hopeless. Yet the world was never left entirely without a witness to the truth,—some guide always came to point to better things and to lead the way. Such a witness to the truth, such a guide to great achievements, such a light amidst the general darkness, was John Sedding. And his (Mr. Wilson's) desire was to give such an account of the work, the ways, and the lovable nature of the man as should, in however rude and imperfect a fashion, bring back memorials of him to his friends, and give to those who knew him not some slight idea of the man. His only fear was lest with so much to choose from, his choice would light upon unimportant things, and give an entirely wrong idea of a really gifted nature. In the year 1838, just when that great revival against traditional art,—the pre-Raphaelite movement—was beginning, and when the great Gothic revival was making itself felt, John Sedding was born. Amid the conflict of old and new ideas he passed his early years. He was remarkable even then for his brightness and winning ways. The love of art soon declared itself, and while but a boy he fell under the influence of Ruskin, and copied many of the plates in the "Seven Lamps." Mr. Kegan Paul, who knew him from his boyhood, and who lent him a book to copy from, said that those copies were remarkable for their fidelity to the originals. After the study of drawing had sufficiently advanced, nothing would do but that he should become an architect, and in 1858 he entered the office of the late Mr. G. E. Street, where his brother, the late Mr. Edmund Sedding, had been for some time. The nature and temperament of these two men were so widely different, and their individuality so strongly marked, that, with the best of efforts on both sides, there could be no perfect sympathy. Sedding, with his fiery enthusiasm, could not be perfectly at home with Street, and in 1853, after forming firm friendships with William Morris, Norman Shaw, and others, he left Street and joined his brother Edmund, who was practising at Penzance, in Cornwall. Yet Sedding always remained loyal to Street. In Cornwall, the enchanted ground of England, the chosen haunt of elves and fairies, the hiding-place of gnomes and goblins, the home of Arthurian romance,—where every hill and hollow had its history, where every hut and cottage teemed with tales of witchcraft, John Sedding's genius found congenial surroundings. He was often to be seen wandering, sketch-book in hand, through the moors and amongst the villages, studying the peculiar developments of Cornish architecture. All these studies of course influenced John Sedding very greatly, and in the restoration of many of the Cornish churches which fell to his share, he added stalls, screens, and oak work, which might have been done by Cornish workmen of the olden time, but yet touched with his own genius. Where absolutely necessary he enlarged these churches, yet always in the spirit of the old work, and in a manner adapted to the natural conditions of the site, so that his work might harmonise with, and be part of, the landscape. These tiny churches, nestling in wayside nooks and crannies, taught him the intensely local, or, indeed, almost parochial character of English art; and he learned when working in any locality to seize upon the local characteristics. No pains were too great for him, and many hours were spent in studying the site and any old buildings near at hand, and his sketch-books were full of notes and studies made for that purpose. In fact, his after success was largely due to his extraordinary faculty for taking pains. The two brothers worked together for some time, until the death of Edmund threw John entirely on his own resources. He took up the remnants of his brother's practice; but finding that Penzance promised little increase of practice, he removed to Bristol. Here he stayed for some time, but, although he gained many friends, he obtained little work. He was living in the presence fair of unachieved achievement; he made designs for embroidery, which were produced in the greatest profusion. His designs for altar cloths, frontals, &c., were adorned by his original fancy with finely-ordered foliage. His frontals were covered with delicious little figure-designs scattered over them. St. Raphael's home at Bristol, where Sedding was precentor, possesses many of his designs, which were worked out by the sisters there. And while his flowers, birds, and beasts were as like the originals as he could make them, although conventionalised, they had an airy grace which made them look at home in the designs. In 1872, he married Miss Rose Tinling, who had no small share in the success which afterwards came to her husband. Through the various works and restorations which he carried out while in Bristol he gained that wonderful knowledge of West Country art which was so useful to him in the work which he took up later on. But Bristol grew too strait for him, however, and prospects of future work were not very promising; so in 1875 he came up to London and set up his home and office at 18, Charlotte-street, Bedford-square. For the first few years he was in London he had little to do. The success he dreamed of seemed as far away as ever, and the work more difficult to get. But he was sustained by his wife's affection and his own trusting nature. Mr. Russell, of St. Albans, who got to know Sedding, gave a very delightful picture of the home at 18, Charlotte-street, and had described how Sedding's influence, even at that early time, began to be apparent. Mr. Russell said that John Sedding had the gift of attracting young men, artists and others, to himself, and of entering speedily into the friendliest of relations with them. He met them with such taking frankness, such unaffected warmth of welcome, that they surrendered to him at once, and were immediately at ease with him and happy. During those happy years he worked hard on designs for fabrics, papers, embroidery, and gold and silver smiths' work, all of which were exceedingly beautiful, and marked by great originality. Though he borrowed, it was to give back again, with so much of added beauty that it made the repayment of the loan a gift. His personality was so vivid, so electric, that it penetrated everything that he did. To enter a church erected by him was to feel a strange feeling that one was in the midst of something unusual. There was a feeling that the work was not that of one man only, but that of a man saturated with the spirit of his time. It was not his (the speaker's) fancy which made him say that, but it was a truth which had struck other men. While waiting for clients, and enduring those times of trial which came to every artist he deepened and widened his already extensive knowledge of English literature and art. He worked with almost painful industry; he wrote papers and lectures teeming with fresh thoughts, and he made designs for houses and mansions for the clients whose coming was so unaccountably delayed, thereby making himself ready for them when they did come. Presently the little office in Charlotte-street was full of work, and he had to get more assistance to carry on his practice. Then began that system which had endeared his memory to all who knew him. He made each assistant, each pupil,—every man who served him,—his personal friend. In 1871 he built the church of St. Clement at Bournemouth. The plan, like that of all Sedding's churches, was admirably simple and adapted to modern ritual requirements. It was connected by a wooden cloister with the red brick vicarage close by. The vicarage was in every way a delightful house, and all three,—vicarage, cloister, and church,—were in perfect harmony, though individually treated. After alluding to Mr. Sedding's *bonhomie* and to the influence which he had over workmen, the lecturer quoted a long passage from a paper read by Mr. Sedding "On Some Sources of Expression in Art" at the congress of the National Association for the Advancement of Art, at their Edinburgh meeting.* From that paper it was evident that John Sedding's art was not Procrustean. In concluding his paper, Mr. Wilson said he regretted that while with one hand the Association was preparing a memorial to Sedding's labours, with the other it had erected an insuperable bar to the progress which he so urgently desired to see. Its gigantic, much-trumpeted scheme of education would, unless some providence overruled its proposals, upset much of what Sedding had taught. It would create a set of professional prigs, a set of business agents,—men who were qualified to have the superintendence of a plan factory, but nothing more. The whole tendency of the scheme was the condonation of Academicism and Institutism,—two dire diseases which were dogging the footsteps of the Association. The birthplace of art was the workshop, and not the *atelier* or drawing-office. The only hope for the architecture of the future was that the architect must become a craftsman, and set up a workshop, and not a studio or office; and his assistants and pupils should work at the mason's "banker" and the carpenter's bench and at the smith's forge. The change could not be effected all at once, perhaps, but it was in course of being done, although the methods adopted by the Associa-

*The paper was printed in full in the *Builder* for November 23, 1889.

tion and the Institute and the Academy were retarding all effort in that direction.

Mr. Leonard Stokes, in proposing a vote of thanks to Mr. Wilson, said he had had the pleasure of knowing the late John D. Sedding for some years, and from the very first moment that he (the speaker) met him, Mr. Sedding filled him with enthusiasm. Mr. Sedding, hearing that he was a young and aspiring architectural student, asked him what he was doing and what he hoped to do, and generally tried to set his brain to work thinking what he should do in the future. Ever since then Mr. Sedding had treated him as a real friend. Whenever Sedding said a thing one might almost be sure that he meant it, and said it for the good of his hearers. He (the speaker) had heard him argue upon the great question which Mr. Wilson had referred to. Sedding's views, he believed, underwent a change, but at the same time there was a time when he fully believed in all that the Institute was trying to do, although he afterwards memorialised against it. He did not think that Mr. Wilson meant any incivility to the Association in what he said about their new scheme. There were two sides to every question, and the Association ought not to be blamed if it paid, in Mr. Wilson's opinion, too much attention to existing facts. They must all, to a certain extent, recognise existing facts, even if they were wrong; and the Association was doing its best to change the existing state of affairs. He was very glad that Mr. Wilson had referred to Mr. Sedding's church at Bournemouth. There were several other churches there which had been built by eminent men, and they were nearly all well worth seeing. But it was surprising what a difference there was between Sedding's church and the others. He would not insinuate that the other churches were bad, but, after looking at those churches, there was actually a sense of relief in seeing Sedding's. The little church was cram full of life and interest, and there was not a feature in it that was not thoroughly thought out, and thoroughly and artistically treated. The church, the parsonage, and the cloister were, in his opinion, about as perfect as they could be. Any one who wished to get a liberal education in a few hours could not do better than spend an afternoon in Sedding's little church at Bournemouth. The church in Sloane-street, which every one ought to see, was a very fine church, and spoke for itself. It was cram full of interest. He thought they were all indebted to Mr. Wilson for stirring up their memories of Sedding, and particularly for the able paper which he had read to them.

Mr. E. W. Mountford, in seconding the vote of thanks, said he thought Mr. Wilson was in error in supposing that his paper would stir up much discussion. If it had affected other members as it had affected him, it rather tended to stop discussion, for, after hearing such a paper, he felt more disposed to think than to talk about it. He had had the great pleasure of knowing Mr. Sedding for some years, and it was during their excursions, which he (Mr. Sedding) generally accompanied, that one saw him at his best. He was full of the greatest enthusiasm for everything that he saw that was beautiful. Since the Association had allowed him (the speaker) to be connected with the proposed memorial to Mr. Sedding, he had had the opportunity, through Mr. Wilson's kindness, of seeing a great deal more of Sedding's own work than he had previously seen, and it certainly filled one with astonishment to think that one man should be able to do so much and such good work. The drawings exhibited on the walls that evening gave them some idea of the quality, but they gave no idea of the enormous quantity of work of the same kind that Sedding had done. In metal and embroidery work, in particular, he seemed to have revelled, and there was no doubt, he thought, that it was by far the most original work of the kind that had been done in our time. It would puzzle most people, and probably it was intended to puzzle them, to say in what style Sedding designed. As Mr. Wilson had said, Sedding took the best from everything and made it part of himself, and worked it into his design. Mr. Sedding's last work, "Garden-Craft," was a book which every architect ought to read, as it was full of suggestions, and showed how Sedding was always thinking. He imagined that the book was written as a sort of recreation in the intervals of rest from his ordinary work, and it showed how Sedding revelled in the garden and admired everything connected with it, and how flowers and birds and everything that was beautiful in that way appealed to him, quite apart from the mere ordinary architectural part of his work. A great number of apposite quotations all through the book showed what an immense amount of reading he must have done, and how and where he found the time to do all these things completely puzzled him (the speaker).

Mr. C. H. Brodie said that perhaps Mr. Wilson's criticism of the Association and its work might be a little less scathing if he would consider that Mr. Sedding attended the meetings of the Association on several occasions, and that he had also constantly accompanied the annual excursions. He did not like men to say that because something had been done to which they objected, because their entire ideas could not be carried out, therefore that the thing which had been done had better not have been done. Progress of all kind was made by combination of talents, and if that Association could get men of varying talents to put their heads together to try to imbue the men about them with their talents, great good would be done. But, unfortunately, the attitude of some men at the present time was like that of the Pharisees of old. The wishes of some men seemed to be that their ideas ought to be worshipped, irrespective of the wants of those around them. He should like some of those men to think of that, and if they did he believed that their attitude would be different from what it was.

Mr. D. J. Blow said he did not think that Mr. Wilson intended to disagree or to run down any work which the Association had done; but merely to help it on. What Mr. Wilson wanted to point out more especially was the good that Sedding had done, and to encourage all good work and to help on students. He supposed, as Mr. Wilson had said, that one of the chief things that Sedding did was to inhale nature,—not merely the study of ancient buildings or of old work. It was his aim that there should be no difficulty about deciding to what period a bit of ironwork belonged, but that it was a part of the present age, and that it expressed not only the present age, but himself. As Rossetti had said, all art, to be worthy at all, should be of the age besides being of the style of the artist, and that seemed to him to be one of the chief points to look at in Sedding's work. To look at Sedding's church at Sloane-street was like looking upon Sedding's face, for there they saw the man by himself. He thought that what Mr. Wilson wanted to do was to help on young students and not to run against any plan of the Association, Academy, or Institute, although he saw that they had done more harm than good. What they ought to do was to get Mr. Wilson to help them by giving them some of his assistance.

Mr. Owen Fleming said they wished to get Mr. Wilson to help them, and did not want him to run off on a track of his own, but to exert his influence on their behalf, by visiting their Class-rooms and endeavouring to throw his enthusiasm into the work of the younger men of the Association. He thought that it was a very great pity that a few men, whose works they all sincerely admired, were assuming a superiority and withholding their influence just at the time they were most wanted. He had met Sedding several times, but he was most influenced by him at the Examination when Mr. Sedding was examiner in design; and he did not think that he had ever had so interesting an half-hour's conversation with anyone as he did with Mr. Sedding at that time, and he felt all the better for it. If Sedding had adopted the line of some of those who admired and hallowed him, he (the speaker) would never have had that conversation, and would have gone on in his old bad ways.

The President, in putting the vote of thanks to the meeting, said it was quite evident that Mr. Wilson was wrong in one part of his paper, but they certainly owed him their thanks for one of the finest pieces of writing which they had heard in that room for some time. There was no one in that room, he thought, who would disagree with a single word of Mr. Wilson's enthusiastic eulogy of the great man whom they had lost. He regretted very much Mr. Wilson's little outbreak about their scheme. It was not, of course, intended to be uncivil, but it was so much in the tone of a great deal that had been said on the same subject, that he did not think it could be of any use to them. If those gentlemen who criticised them would only show them something which they could really do, which would be practicable, they might effect some good; but he thought that such expressions as were sometimes used were only likely to embitter the little breach that was beginning to spring up between the Association and some of the members whom they most admired and respected. It seemed to him that if those gentlemen would try to help them,—try to make their ideas have weight with them,—instead of standing outside and talking to them from a distance, it would be a better thing to do in all respects.

The vote of thanks was then put to the meeting, and carried unanimously.

Mr. Wilson, in the course of his reply, said that he was sorry that what he had said about the Architectural Association scheme should have been somewhat misunderstood. Mr. Blow was quite right when he said that what he (the speaker) wanted to do was to help them on. He did not wish to set himself up as a Pharisee, least of all there, for he could do that better at home. With regard to the practical outcome of what he had been saying, it was perfectly possible for a set of architects to establish workshops, or a workshop where the pupils of architects should go and work a certain number of hours and days in the week. Let them be taught there, and let them do some work which was going into the building. Let them also learn carving, and let them be sent to the building and do work upon that. If that were done, what he had been suggesting,—the happy time that he wished to see,—would be brought appreciably nearer; but if they were going to set up a studio, and to teach people merely to model, to draw, and to design, they would only be perpetuating the old system. They could not get rid of the present system at once, but they would have to get rid of it by and by, and they could only do so by allowing pupils to do actual work on buildings. If he could be of any assistance to them, although he did not see how, he would be perfectly willing to give them all the help in his power. He did not wish to set himself up as a standard, but what he had said had been said to make them think; and if he had done anything to help them to see what he urgently desired, viz., the real revival of real art, he would be more than gratified.

The meeting then terminated.

Illustrations.

GLOUCESTER CATHEDRAL.*

In addition to the plan and view of each cathedral which we have undertaken to give in the series of English Cathedrals, we are enabled to give some further drawings of the interior of the nave, the choir, and the Lady Chapel, by Mr. C. E. Mallows, who has offered us the use of these further drawings on almost nominal terms; and a drawing of the interior of the cloisters by Mr. Kotaro Sakurai. This latter drawing was offered to us by the artist for publication some time since, but we thought it better to combine it with the other illustrations of Gloucester.

For the following account of the cathedral we are indebted to Mr. F. S. Waller, Fellow of the Institute of Architects, and Resident Architect to the Dean and Chapter of Gloucester, who has kindly placed at the disposal of our readers his exceptional knowledge of the structure and history of the Cathedral:—

The Abbey of Gloucester is stated to have been founded by Osric towards the end of the seventh century. Abbesses were its first rulers; it was afterwards occupied by secular priests, and 200 years later by Benedictine monks.

Abbot Froucester, who is supposed to have written the "History and Chartulary of St. Peter's Monastery," which is received as the great authority for all connected with the buildings up to the time of his decease, states

* We may mention that this series of illustrations of the Cathedrals of England and Wales commenced with Canterbury, which appeared in the *Builder* for January 3 last. Since that date, the following Cathedrals have been illustrated, viz., Lichfield, in the number for February 7; St. Albans (before the alterations of recent years), March 7; Peterborough, April 4; Wells, May 2; Exeter, June 6; Salisbury, July 4; Bristol, August ; Norwich, September 5; Rochester, October 3; and Lincoln, November 7. The thirteenth of the series, viz., St. Paul's Cathedral, London, will appear in the *Builder* for January 2, 1892.

that Aldred, Bishop of Worcester (1044-1060), rebuilt the church and consecrated it in 1058, also that Serlo laid the foundation of a new church in 1089, and dedicated it in 1100. Now, there need be no question as to Aldred's church having existed in the eleventh century, but considerable doubts have arisen as to whether any portion of this structure remains in the buildings as we now see them,—an inquiry which, perhaps, to most people, may be satisfactorily answered by stating the opinions of Professors Willis and Freeman, as published in the papers of the Royal Archæological Institute (1860), and in the "Records of Gloucester Cathedral, 1882-84," the former stating "that he was clearly of opinion that when the foundations of the Cathedral were laid, the crypt was planned to receive the existing superstructure and no other," and "that the building is in conception a Norman building from bottom to top;" and the latter (Professor Freeman) saying, "the first thing we do know for certain is, that in the year 1089, thirty-one years only after the dedication of Ealdred's church, Serlo, the first Norman abbot, began the building of a new church, which was itself dedicated in 1100."

This church of Abbot Serlo, the church of the great Benedictine Abbey of St. Peter, is erected on high ground in the city of Gloucester, and is built over the north-west corner of the old Roman wall, the wall itself having provided much of the stonework used in the Norman fabric.

The foundations of this wall pass in a direction east of the south porch, taking a diagonal line towards the north-east under the nave and its aisles, from thence turning round by the Chapter-house, and traversing in a south-easterly direction past the east end of the Lady Chapel.

The whole outline of the Norman church remains almost perfect, the exception being the west front of the nave and its aisles, which have been entirely removed, as also the east end of the Chapter-house.

The church was originally surrounded with all the usual and necessary monastic buildings, part of which remain, though much altered and mutilated, and in 1104 Abbot Peter enclosed the monastery with a stone wall, nearly all of which may yet be traced, together with remains of old gateways, but these are of later date.

About this time commenced the alterations and additions of various kinds, arising from fire, imperfect foundations, love of variety, or other causes, which have resulted in producing one of the most interesting studies of ancient architecture. There can be no doubt that fire was the origin of much destruction, as it has left its mark in the Chapter-house, on the nave columns, and in the cloisters, and it is often mentioned in the Froucester chronicles before referred to.

Taking these alterations, since Serlo's time, in their proper sequence, a commencement must be made with the works executed in the crypt, in the twelfth century, and which were effected in order to strengthen the original building, the foundations of which were faulty; this was done by casing the early imposts to make them strong enough to carry additional arches underneath those already provided, and this work, followed in the fourteenth century by the large masses of masonry which were erected to carry the new choir above, then in course of erection, makes the crypt, on a first inspection and until properly explained, a very complicated problem.

The outer walls of the crypt are about 10 ft. thick, and the aisle-floor is on an average 8 ft. below the level of the soil on the outside of the building. The centre part is divided by two rows of small columns, irregularly placed, from which spring arches carrying the floor of the choir above; the bases and capitals of these small columns are much out of level, from west to east, and from north to south, and in design they vary greatly, as to their capitals, abaci, and bases; all of which are strikingly different from the half columns, with cushion capitals, attached to the outer walls, on which rest the ribs they mutually carry; so different, indeed, are they, as to make it very questionable if by far the larger portion of these columns does not belong to an earlier church; is it not possible that they may be more ancient work than that of Serlo (possibly Aldred's) simply reused?

The shape of the east end of the old church is very unusual, being partly round and partly polygonal; round as regards the outer wall of the main building, and the inside and outside of the small chapels in the crypt, but polygonal in the interior walls of the main building in the crypt; whereas on the ground floor, the main building and the chapels are all polygonal.

Before 1242 the Early English vaulting of the nave was erected, said to have been done by the monks themselves after the wooden roof of the nave had been destroyed by fire.

About this time also much Early English work must have existed on the north side of the church, of which there are the remains of the Infirmary, the Refectory, and other buildings; in the church itself is the beautiful Reliquary, the nave vaulting, and some small works in the crypt.

The next great era in this building (and it marks a very striking one, as regards ways and means) was inaugurated by the good policy of Abbot Thokey, who caused the body of Edward II. to be brought from Berkeley Castle to the Abbey Church for interment, and with this important result, viz., that the offerings at his tomb were of such magnitude as to provide the Monastery with funds sufficient to execute all the important works which were undertaken during the fourteenth and fifteenth centuries.

From this time (*c.* 1307) commenced the singular and withal successful operations of cutting, contriving, and casing which now represent some of the most remarkable features in this church (verily these men took marvellous liberties with the works of their predecessors); parts of the edifice had already been propped, the foundations were known to be doubtful, and also that the Norman walls were most indifferently constructed. These men of the period continued however to progress more or less under various Abbots from the early part of the fourteenth to nearly the middle of the sixteenth centuries, pulling the old Norman work about and rebuilding on old foundations without in any way coming to grief, and in no part do their works even now show the least sign of settlement. Abbot Thokey (1307-1329) himself commenced with the south aisle of the nave, leaving a very small portion of the old Norman wall remaining, attaching to and building in with this, the windows, buttresses, and vaulting as now seen, and which, of its kind perhaps, is one of the finest and boldest bits of "Decorated" work in England. This was followed by the alteration, casing, and vaulting of the south transept under Abbot Wygmore, 1329-1337, the early date and character of which led Professor Willis to remark "that the Perpendicular style might have commenced in this district." The early mouldings throughout, the absence of bosses in the vaulting and other minor details, in combination with the unmistakable leading "Perpendicular" lines are very remarkable.

Abbots Staunton and Horton, 1337-1377, cased and vaulted the choir and presbytery, a really magnificent design. They completed also the north transept, and finished the great cloisters as far as the Chapter-house, these being completed by Abbot Froucester, 1381-1412.

Professor Willis believed that fan-vaulting, of which the cloisters are a splendid specimen, was first produced in Gloucester.*

Abbot Morwent, who presumably pulled down the western façade of the Cathedral, erected the two western bays of the nave, the south porch, and possibly the windows in the clearstory of the nave. Abbot Seabroke, 1450-1457, commenced the great central tower, which was completed by Robert Tully, a monk of Gloucester, which is thus commemmorated above the western arch of the Tower:—

"Hoc quod digestum specularis opusque politum
Tullii hæc ex onere Seabroke Abbate jubente."

The Lady Chapel was built by Abbots Hanley and Farley, 1457-1498, the east end of the Chapter-house, remains of the little cloisters, and alterations in the library, possibly about the same time,—and this brings to a conclusion a short summary of the works of the Abbots of Gloucester.

The ancient monuments of interest are those to Osric, Robert of Normandy, Foliot, John de Staunton, Edward II., Seabroke, Knight and Lady unknown, and Parker, the last Abbot.

Osric, said to be the first founder of the Church (729), the tomb having been erected in the sixteenth century, by Abbot Parker.

Robert of Normandy, eldest son of the Conqueror, an effigy in oak, time of Henry III., on an oak chest, probably fifteenth-century work; it was originally placed in the centre of the presbytery.

Foliot (?), Henry, 1243. A much-damaged effigy of an Abbot (Early English work), placed on a bracket of same date as choir.

John de Staunton, until lately in the cloisters opposite Chapter-house door. One half of a flat stone, with incised work filled with white cement, now in the crypt. (He was a kinsman of Abbot Staunton, who died after him in 1351.)

Edward II.—Lower part of tomb of Purbeck marble, exquisitely carved (the best-executed work in the Cathedral). The effigy of alabaster, and canopy above of freestone.

Abbot Seabroke.—A chapel formerly complete with altar, reredos, &c., and surrounded by open screens of stone; effigy of alabaster.

Abbot Parker, the last Abbot of Gloucester. An alabaster effigy on a high tomb.

There are several slabs in the north and south transepts, and in the chapels under the tower arches, and in the cloisters, on which the outlines of former brasses can be traced, and also some few incised flat stones.

Of old painted glass the finest specimen is that in the great east window, supposed by the late Mr. Winston to have been put up between 1347 and 1350. This glass was taken down and simply releaded in 1862, under Mr. Winston's supervision. There are more than 2,000 square ft., and the first cost is said to have been 140*l.* There are fine remains of old glass in the Lady Chapel and in some other parts of the building.

In the upper floor of the tower is a peal of eight bells, and on the floor below is "Great Peter," which weighs 6,500 lbs., and on which is written "Me fecit fieri conventus nomine petri."

The framing carrying this bell is a fine piece of oak construction.

General Dimensions.

	Length. ft.		Width. ft.		Height. ft.	in.
Nave	174		34		68	0
North and south aisles of nave	,,		15		40	0
Choir and Presbytery	140		33		86	0
Transept, north	46		34		78	0
,, south	46		34		86	0
Lady Chapel	90		25		46	0
Chapter-house	72		33		35	0
Cloisters, about	147	square	12		18	6
Tower	40	on lead roof	40		225	0

The total lengths of the Cathedral are:—Internal measurement, 407 ft.; external measurement, 425 ft.

Some of the best views of the exterior of the Cathedral are to be seen from the meadows on the north-west, and from the canons, and other gardens on the north-east and south-east of the building.

The tower is an unrivalled design,* and the east end of the Presbytery, with its singular construction and very ingenious attachment to the Lady Chapel is quite unique, a most interesting study, and, as regards the upper part of it, singularly elegant.

To thoroughly comprehend the alterations of this east end, and its conversion from a Norman apsidal termination into the present fine eastern façade, the work itself must be seen; any written description of the exceedingly clever transformation would probably be tedious, and possibly fail in affording the required information; sufficient to say, therefore, that it is one of the masterpieces of the Cathedral,—wonderful for its constructive daring, and most happy in its artistic result. These remarks may equally apply to the whole of the "Perpendicular" casing of the choir, the choir ambulatories, and the transepts, behind which casing may be seen at a glance the bold lines of Serlo's old church.

Viewed from the exterior, the extraordinary patchwork of the styles of architecture to a visitor who sees the Cathedral for the first time must be very startling, observing as he will do fourteenth and fifteenth century windows surrounded with Norman mouldings and ornaments, all framed together as if they were originally so designed; and his difficulties will continue until he sees for himself, or is told, that the old Norman church is buried under a new casing of "Decorated" and "Perpendicular" work, and that the old Norman remains have been reused in the new erections. It would seem as if these fourteenth and

* In addition to Mr. Kotaro Sakurai's view of the corner of the cloister, we may refer our readers to a double-page view of the cloister, drawn by Mr. Mallows, in the *Builder* for Oct. 19, 1889.—ED.

* We may refer our readers to an admirable drawing, by Mr. W. H. Bidlake, of the upper part of the tower, published in the *Builder* for July 31, 1886.—ED.

fifteenth century men were conservative in their ideas, and had felt more pleasure in using up the old masonry than they are usually credited with, thanks to their better taste. Of the cloisters, it is needless to speak, they are so well known as the finest and most perfect in the kingdom.

Of minor works, special attention may be drawn to the Early English reliquary in the north transept, to the reredosses in the various chapels, and especially to that in the Lady Chapel, now a ruin, but which, in the time of its glory, must have been one of the finest works of its kind in England, both for its design and its painted decoration.

FREDK. S. WALLER.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of this Council was held on Tuesday afternoon at Spring-gardens, the Chairman, Sir John Lubbock, presiding.

The Public Health (*London*) *Act*, 1891.—The General Purposes Committee presented a report in which they said:—

"In 1890 a Bill was drafted by the Local Government Board for consolidating the Public Health Laws of the Metropolis. This Bill was referred to a Special Committee of the Council, consisting of selected members from the Sanitary, Housing of the Working Classes, and Parliamentary Committees. This Joint Committee formulated a series of recommendations for the amendment of the law, which, having received the approval of the Council, were duly submitted to Mr. Ritchie. The Bill was not then proceeded with, but it was re-introduced in the spring of this year, and with it an amendment Bill, incorporating nearly the whole of the Council's recommendations. Mr. Ritchie, in introducing the Bills, acknowledged his indebtedness to the Council for the pains taken in indicating to him the difficulties which interfered with the present administration of the law, and in making suggestions for its amendment. These Bills were in their turn referred to the Special Joint Committee and reported on to the Council on April 17, and as a result certain further suggestions for amendment were forwarded to the President of the Local Government Board, with a letter fully indicating the views of the Council.

The two Bills, viz., the Consolidation Bill and the Amendment Bill, were referred by the House of Commons to the Standing Committee on Law, by whom they were amalgamated into one.

The Bill met with very considerable opposition on the part of the Vestries and District Boards, whose representatives strenuously opposed many of the most important amendments, and as a result modifications of comparatively little moment were conceded, such as in regard to the framing of certain By-laws. The Bill passed through the report stage, and was read a third time in the House of Commons on June 27. It then went to the House of Lords, where it was read a second time on July 7, and, after slight amendment, was read a third time and passed on August 5. The Act comes into force on January 1, 1892.

The following are the principal amendments in the law which directly concern the Council, those suggested by the Council being indicated by an asterisk. Many other important amendments suggested by the Council have also been incorporated in the Act, but as they do not directly affect the Council they are not referred to in this report."

As to new powers and obligations conferred or imposed upon the Council,

"Section 16 imposes on the Council the duty of making By-laws (*a*) As to the removal or carriage by road or water of offensive or noxious matter or liquid. (*b*) As to the closing and filling up of cesspools and privies, and as to the removal and disposal of refuse, and as to the duties of the occupier of any premises in connexion with house-refuse so as to facilitate the removal of it by the scavengers of the Sanitary Authority.

It is to be the duty of the Sanitary Authority to observe and enforce these By-laws.

* Section 20 requires that knackers' yards shall be licensed by the Council.

Section 22 provides that where the removal of house and street refuse by a Sanitary Authority *when collected or deposited by that authority* is certified to be a nuisance or injurious or dangerous to the health of the inhabitants, the Council may proceed against the Sanitary Authority for its abatement. Premises used by a Sanitary Authority *for the treatment or destruction of refuse* (as distinct from its removal), so as to be a nuisance or injurious or dangerous to health, are to be nuisances liable to be dealt with summarily, and the Council is authorised to take proceedings with consent of Local Government Board.

* Section 39 requires the Council to make, and the Sanitary Authority to enforce, By-laws with respect to water-closets, earth-closets, privies, ash-pits, cesspools, and receptacles for dung and the proper accessories thereof in connexion with buildings, whether constructed before or after the passing of this Act.

* Section 56 gives the Council, as respects London, the same power of requiring by order the notification of any infectious disease not specifically mentioned in the Act, and the same power of revoking and varying the order as a Sanitary Authority have as respects their district.

Section 90 enables the Council to require any Sanitary Authority to provide and maintain a proper building (otherwise than at a workhouse) for the reception of dead bodies during the time required to conduct any post-mortem examinations ordered by a coroner or other constituted authority.

Section 91 enables the Council to authorise Sanitary Authorities to unite for the purpose of providing a mortuary or post-mortem building.

Section 92 requires the Council to provide and maintain proper accommodation for the holding of inquests.

Section 93 enables the Council to provide and maintain one or two mortuaries for unidentified bodies.

* Section 100 empowers the Council, on it being proved to their satisfaction that any Sanitary Authority (except the Commissioners of Sewers of the City) have made default in doing their duty under this Act with respect to—(*a*) The removal of any nuisance, (*b*) The institution of any proceedings, or (*c*) The enforcement of any By-laws to institute any proceedings and do any act which the authority might have instituted and done, the Sanitary Authority in default being made liable to pay the Council's expenses in so doing.

* Section 101 provides that when complaint is made by the Council to the Local Government Board that a Sanitary Authority have made default in executing or enforcing any provision which it is their duty to execute or enforce under the Act, or of any By-law made in pursuance thereof, the Local Government Board, if satisfied after due inquiry that the Sanitary Authority have been guilty of the alleged default and that the complaint cannot be remedied under the other provisions of the Act, is to make an order limiting the time for the performance of the duty of such authority in the matter of such complaint. If such duty is not performed by the time limited in the order, the order may be enforced by writ of mandamus, or the Local Government Board may (except as to the City) appoint the Council to perform such duty, and the expenses are to be paid by the Sanitary Authority in default.

* Section 107 requires Sanitary Authorities to appoint an adequate number of qualified sanitary inspectors, and, in case of their failure to do so, enables the Local Government Board on the complaint of the Council to order the appointment of a proper number.

Section 108 requires the Council to pay one-half of the salary of every medical officer of health and sanitary inspector appointed after January 1, 1892.

It will be observed that the most important amendments are those which give the Council the power of enforcing due execution of the law by the Sanitary Authorities. As illustrations of this power, the following examples may be given. Supposing a Sanitary Authority neglects to remove any nuisance in its district, the Council can act in place of the Sanitary Authority and exercise its powers. Supposing, also, the Council to have made By-laws as to removal of house refuse, and these are not properly enforced by the Sanitary Authority, the Council could itself enforce them under section 100 of the Act. And again, where the Sanitary Authority had not provided a mortuary within a reasonable time, the Council could under section 101 make complaint to the Local Government Board, and ask either for a writ of mandamus or for authority to supply the want, and could charge the Sanitary Authority with the cost.

The power of control and enforcement vested now in the Council is in fact far-reaching, and should be effectual to ensure a vast improvement in sanitary administration throughout the metropolis. It is hard indeed to conceive of any case of negligence on the part of the local authorities which the Council, if it sees fit, may not now remedy. So large a power involves grave responsibility on the Council.

The pivot on which the Act turns is contained in its first section, which makes it the duty of every Sanitary Authority to inspect their district, to ascertain and abate nuisances, and to put in force the powers of the Act, *so as to secure the proper sanitary condition of all premises within their district*. Equally now must it be considered the duty of the Council to see that the Sanitary Authorities are not in default. In short, the Act incorporating as it does the provisions of the Local Government Act, 1888, as to appointment and salaries of medical officers, and read with the Housing of the Working Classes Act, 1890, probably gives the Council effectual control over the health and sanitation of London.

In consequence of the extent and importance of the new duties cast upon the Council it became necessary to consider whether the existing arrangements were sufficient or best adapted to successfully carry them out. This question was carefully inquired into by a Joint Committee composed of representatives of the Committees principally concerned, and, after considering their report and communications from the Housing and Sanitary Committees intimating their agreement with its purport and recommendations, we have arrived at the conclusion that the present staff is inadequate for the discharge of the new obligations, and that it should therefore be strengthened and re-organised so that it may be in a position properly to fulfil them. The Committees of the Council which at present deal with matters affecting the health and security of London should also be reconstituted.

It will be convenient to set out the duties at present assigned to the Sanitary and Special Purposes Committee and the Housing of the Working Classes Committee, which are the two Committees concerned in the matter."

At to the present duties of the Sanitary and Special Purposes Committee:—

"This Committee now has entrusted to it the execution of the powers of the Council under the following Acts of Parliament:—The Slaughter-houses (Metropolis) Act, 1874; The Explosives Acts (and Orders in Council thereunder); The Petroleum Acts; The Infant Life Protection Act, 1872; The Weights and Measures Acts; the Acts relating to the testing of gas and the testing of gas-meters; the Nuisances Removal and other Sanitary Acts, so far as the Council has jurisdiction thereunder; the Metropolis Management Act, 1862 (Section 93), and the Local Government Act, 1888 (Section 45), relating to the licensing of slaughterhouses and cowhouses; the Contagious Diseases (Animals) Acts, and the various Orders in Council thereunder.

The Committee also has referred to it all questions relating to,—the appointment by the local authorities of medical officers of health, and the reports sent to the Council by such officers, except so far as such reports relate to the work of the Housing of the Working Classes Committee; the office of Coroner in the County of London, the districts of the Coroners, and the fees, allowances, and disbursements to be allowed by Coroners; the provision of a constant supply of water under the Metropolis Water Act, 1871; the powers of the Council under the Railway and Canal Traffic Act, 1888."

As to the present duties of the Housing of the Working Classes Committee:—

"This Committee deals with,—All matters connected with insanitary areas as well as individual houses which, when in such a state or condition as to be dangerous or injurious to health so as to be unfit for human habitation, have to be dealt with under the Housing of the Working Classes Act, 1890.

We are of opinion that the duties which will devolve on the Council under the Housing of the Working Classes Act and under the Public Health Act so far as that Act relates to sanitation and health should be entrusted to one committee, to be known as the Public Health and Housing Committee. This will prevent overlapping and tend to efficiency of administration.

We also think that in substitution for the Sanitary Committee there should be a Committee to be called the Public Control Committee, which should be charged with the administration of the various Acts placing the supervision and control of dangerous trades and matters not connected with Public Health in the hands of the Council. If this suggestion be adopted, the following would be the distribution of the duties appertaining to the two Committees.

The Public Health and Housing Committee will be charged with the following duties, viz.:—The duties arising under the Housing of the Working Classes Act, 1890; the following duties under the Public Health (London) Act, 1891: Preparation of by-laws; licensing and supervision of slaughter-houses, cowhouses, and knackers' yards; prevention of nuisance by the Sanitary Authority in the removal or disposal of refuse; the supervision of offensive trades; the enforcement of the provisions of the Dairies, Cowsheds, and Milkshops Order; and acting in default of the Sanitary Authority with respect to,—(*a*) The removal of any nuisance; (*b*) The institution of any proceedings; or (*c*) The enforcement of any by-laws: the enforcement of provisions of section 101 relating to the default of Sanitary Authority in executing the provisions of the Act; and generally carrying out such of the Council's duties under the Act as relate to sanitation and public health.

The Public Control Committee will be charged with the following duties, viz.:—The execution of the powers of the Council under the following Acts of Parliament: The Weights and Measures Acts; the Explosives Acts and Orders in Council thereunder; the Petroleum Acts; the Acts relating to to the testing of gas; the Acts providing for the testing of gas-meters; the Contagious Diseases (Animals) Acts and the Orders in Council thereunder; the Infant Life Protection Act; all questions relating to,—The office of Coroner in the County of London, the districts of the Coroners, the fees, allowances, and disbursements to be

allowed by Coroners, and the provisions of Coroners' courts; the provision of a constant supply of water under the Metropolis Water Act, 1871; the powers of the Council under the Railways and Canal Traffic Act, 1888; and also the provisions of the Public Health Act, which relate to the prevention of nuisance from smoke; as well as other matters of control of a cognate nature.

As the work which will fall upon the Public Health and Housing Committee will be of considerable extent, we think it should consist of not less than twenty-four or more than thirty members. We suggest that the Public Control Committee should consist of not less than twelve, or more than fifteen members.

The new Act comes into force on January 1; it is essential, therefore, that all the arrangements for carrying it into effect shall be completed before that date.

It will be convenient if, for the period between January 1 next and the re-election of the Council in March, the members of the present Housing of the Working Classes Committee and Sanitary Committee form the new Public Health and Housing Committee. This would avoid the election of any new committee for so short a period, and would ensure continuity of administration.

As regards the Public Control Committee, this might for the period in question consist of the present members of the Sanitary Committee.

The changes thus proposed involve departmental ones, and we have come to the conclusion that a Public Health Department should at once be formed with the Medical Officer of Health at its head, and that the staff of the Medical Officer should be materially increased. The Medical Officer is at present quite unable to cope with all the work that arises under the Housing and other Acts administered by the Council, and it is obvious that he will be still less able to undertake the larger duties which the administration of the new Health Act will impose upon him, unless material assistance be given him. We think it essential that two Assistant Medical Officers of Health and a good statistical clerk should be at once appointed. The need for a statistical clerk has long been felt in the Medical Officer's department, both in connection with the administration of the Housing of the Working Classes Act, and the discharge of other duties which devolve upon that department. This branch of work will, moreover, be largely developed now that the Council will be concerned in watching as a central sanitary authority over the health of London. The staff of the Medical Officer of Health at present consists of one inspector and three clerks. For the inspection of slaughter-houses, dairies, milkshops, &c., we propose that four inspectors and two clerks should be transferred from the staff at present under the Sanitary Committee, and that one additional inspector should be added; also that two clerks should be transferred and a boy-clerk added. If these suggestions are carried out, the staff of the Public Health Department will, in addition to the Medical Officer of Health, consist of two assistant medical officers of health, six inspectors, a statistical clerk, five other clerks, and one boy-clerk.

The Sanitary and Special Purposes Committee have hitherto been under some disadvantage in connexion with their work. They took over a faulty system which was allowed to grow up in the time of the late Board, under which the Clerk was (as he still is) nominally responsible for all the work under the control of the Committee, much of which is purely technical in character. The work has been really done by Mr. Spencer, assisted by a large staff of inspectors and clerks. Mr. Spencer has, in addition, other work in the Clerk's department, and holds the position of Deputy-Clerk. We understand from the Clerk of the Council that he feels strongly, and has always felt, the anomaly and inconvenience of the present arrangement under which he is nominally responsible for strictly technical work which he does not profess to understand; whilst Mr. Spencer, who does understand it and efficiently carries it on, does so under the title of Deputy-Clerk, a title which has no relation to the work.

There is another point which it has been necessary for us to consider, and which has relation to the work of the Council under the Weights and Measures Act, including the supervision of the sale of coal. Nearly two years ago (on December 17, 1889) the Council, when considering the question of the staff to be employed upon this work, resolved that at the head of the staff there should be a Chief Inspector of Weights and Measures with a salary of 500*l.* a year. The Sanitary Committee advertised for candidates for this office, but only five persons applied, and not one of them did the Committee consider suitable for the position. The duties attached to the office have, therefore, from the beginning been carried out by Mr. Spencer, under the direction of the Committee, and he has had the supervision of the inspectors and of the large staff of men employed under the Act. The Sanitary Committee, we understand, are now preparing a series of statutory regulations, relating to the work of the Weights and Measures Inspectors, which will shortly be submitted to the Council, and it will be necessary to make more complete arrangements for the observance of these regulations. The carrying out of the law relating to weights and measures has been greatly improved since it has been under the control of the Committee, but there is undoubtedly room for further development; and, as the effective and uniform operation of the law is of great importance both to traders and the public at large, it should be under the management of a competent head, who should make periodical visits to the various stations and out-door staff, and be directly responsible for the work. Mr. Spencer has made himself thoroughly acquainted with the law and its operation, and we are of opinion that it would be well for the Council, instead of appointing a new Chief Inspector of Weights and Measures, as was originally resolved, to make Mr. Spencer the responsible head of this branch of work as well as of the work under the Explosives Acts, the Petroleum Acts, the Contagious Diseases (Animals) Acts, the Infant Life Protection Act, and of work connected with water supply, coroners, and other cognate matters of control. This would effect a real economy of expenditure, as, instead of having Mr. Spencer as Deputy-Clerk (an office which does not appear necessary) at 600*l.* a year, and a Chief Inspector of Weights and Measures at 500*l.* a year, Mr. Spencer would be head of the new department with, as we should suggest, a small increase of salary, beginning at 650*l.* a year and rising by increments of 50*l.* a year to a maximum of 800*l.* As regards the Clerk's department there would have to be some re-arrangement of the work, but the change would only necessitate the addition of a junior clerk. The staff which Mr. Spencer would have under his control would be four clerks, forty-four inspectors, and forty-two assistants, &c., making a total of ninety-one, all these being now in the employment of the Council; and we believe this staff will prove sufficient to carry on the work.

The recommendations necessary to give effect to this report are as follows:—

(*a*) That a Public Health and Housing Committee be appointed, with an order of reference to be hereafter settled, to consist in the first instance of the members who now constitute the Sanitary and Housing of the Working Classes Committees, and later, when all the Committees of the Council are re-appointed, of not less than twenty-four or more than thirty members.

(*b*) That a Public Control Committee be appointed, with an order of reference to be hereafter settled, to consist of not less than twelve and not more than fifteen members, and that the present members of the Sanitary and Special Purposes Committee do constitute the said Committee until the Committees of the Council are re-appointed.

(*c*) That a Public Health Department be formed under the direction of the Medical Officer of Health of the Council, and that in the first instance this department do consist of the Medical Officer and of two Assistant Medical Officers of Health, six Inspectors (five now in the employment of the Council), one statistical clerk, five other clerks (now in the employment of the Council), and one boy-clerk.

(*d*) That two Assistant Medical Officers of Health be forthwith appointed at a salary of 600*l.* a year each; one statistical clerk, in the first-class, at a commencing salary of 200*l.* a year; one inspector, at a commencing salary of 150*l.* a year, and one boy-clerk, at 15*s.* a week.

(*e*) That a Public Control Department be formed, under the direction of Mr. Spencer as chief officer, to consist of four clerks, forty-four inspectors, and forty-two assistants all now in the employment of the Council; that, in consideration of the increased responsibility devolving upon Mr. Spencer, his salary be on April 1 next increased to 650*l.* a year and do afterwards rise by yearly increments of 50*l.* to 800*l.* a year; that he do cease to hold the office and title of Deputy-Clerk; that such office be not filled up; and that the resolution of the Council to appoint a Chief Inspector of Weights and Measures at a salary of 500*l.* a year be not acted upon.

(*f*) That it be referred to us to prepare the references for the two Committees, and to make the necessary arrangements subject to confirmation by the Council."

A long discussion ensued on this report. Paragraphs *a* and *b* were adopted, but paragraphs *c* and *d* were amended by its being determined, by the energy of the "economists," to appoint only *one* Assistant Medical Officer of Health, at a salary of £500, and this in face of the assurances of the members of the Committee that there was ample work for two capable Assistant Medical Officers under the Chief Medical Officer, Dr. Shirley Murphy. Consideration of the other paragraphs of the report was adjourned.

The Council was counted out at a quarter-past seven.

COMPETITIONS.

BATH MUNICIPAL BUILDINGS.—The report on the competition designs did not come before the Council at their last meeting, but will come before a special meeting of the Council to be held on the 10th inst.

"DESIGN FOR WALL DECORATION."—In the notice of this illustration in our last number the name of the firm who are manufacturing the design should have been given as "Rottman, Strome & Co." instead of "Rottman & Co.," and the decoration described as being made "by" them, not "for" them. The mistakes were not ours.

BURNING OF THE THEATRE AT OLDENBURG.

ABOUT two hours after an evening performance given on the 24th ult., *i.e.*, shortly before midnight, an outbreak of fire, which resulted in an entire destruction of the building concerned, occurred in the Court Theatre of the city of Oldenburg, the capital of an independent German Duchy of the same name. The theatre, standing free in its own grounds, holding an audience of one thousand, with a very modern plan and a pleasing exterior and interior design, was opened in 1881, from the design and under the superintendence of the Court architect, Herr Schnitger, at a cost of about 15,000*l.* The cause of the fire is not known. In all probability the outbreak was, however, due to a stray particle of some fireworks which had been burnt during the last act of the play. That the fire was not noticed in its primary stage, but had to be discovered from the outside when already in full power, must be due either to the non-existence of any regular patrol in the house at night, or to the negligence of those in charge; that the fire was not seen until so late from the outside is due to the unfrequented site on which the theatre is situated. That nothing but the bare walls could be saved would not have been surprising, even if a good professional fire-brigade had been in attendance after the late call; as it was, the city only has a volunteer brigade, which had another large fire to attend to that night. For those acquainted with the legislation pertaining to the protection of theatres in the different countries of the Continent, it will be well to note that the theatre burnt down, situated as it was in the capital of an independent German Duchy, was not, as would be generally believed, subject to the Prussian police regulations. These regulations prohibit the use of all fireworks on theatre stages, and require not only a "performance watch" of efficient firemen for the time the audience is in the house, but also a "patrol" of well-controlled private watchmen at regular intervals during the remainder of the twenty-four hours. Another point deserving of attention is the fact of the building burnt down being a "Court" theatre. Throughout Germany, such theatres as a rule have certain defined or undefined privileges, and hold an exceptional position in comparison with the private or municipal theatres, in many cases to such an extent that the police authorities, fearing to offend Royalty by interfering with the Court official (mostly a protégé) in charge, purposely overlook defects, omit to press improvements, and even make special exceptions. An investigation into the state of affairs at the Oldenburg Theatre will be made, and it would be interesting to know what will be the result; but it is doubtful whether this will be officially published.

BUILDERS' BENEVOLENT INSTITUTION.

ELECTION OF A PENSIONER.

AN election of one female pensioner on the funds of this Institution was held at the offices, 35, Southampton-row, Bloomsbury-square, on Thursday, 26th ulto., Mr. B. E. Nightingale (President) in the chair. There were four candidates for the vacancy.

Shortly after the close of the poll the scrutineers (Messrs. T. Sterling and Ernest Rider) announced the results of the polling to be as follows:—Margaret Alice Richardson, Preston, North Shields, aged 66, widow of T. B. Richardson, late of Bayswater, builder (sixth application), 2,655 votes; Mary Ann Shapland, 132, Stamford-street, Lambeth, aged 71, widow of William Shapland, builder (fifth application), 3,294 votes; Sarah Elizabeth Drake, Tylers' and Bricklayers' Almshouses, King Henry's-walk, Ball's-pond, widow of Francis Drake, late of Acton, builder (second application), 1,339 votes; and Susanna Mansell, of 20, Bridge-road, Hammersmith, aged 68, widow of William Mansell, builder (first application), 806 votes. The successful candidate was, therefore, declared to be Mary Ann Shapland.

Among the friends of the Institution (other than those already named) who took part in the proceedings were Messrs. Geo. Plucknett, J.P. (hon. treasurer), C. Bussell, J. T. Bolding, W. Scrivener, T. Hall, and H. Ashby.

Votes of thanks to the Chairman and scrutineers closed the proceedings.

THE NEW COPENHAGEN HARBOUR.—The work of pumping out the sea from the new harbour in course of construction in Copenhagen has been futile, as the other night the waves broke through the dam and re-filled the basin.

Books.

Engineering Chemistry. By H. J. Phillips, F.I.C., F.C.S. London: Crosby Lockwood & Son.

THE author of this work is a practical man, who, as Consulting Chemist to the Great Eastern Railway, has had peculiar opportunities for becoming thoroughly conversant with his subject. We are inclined to find fault with the title as somewhat misleading, the treatise being mainly devoted to descriptions of methods for the analysis and valuation of some of the principal materials used in engineering work. Unless the work is to be used in a purely mechanical way, as the housewife uses her cookery-book, a sound knowledge of the foundation principles of chemistry must be pre-supposed. It is almost a pity that the author has not made the work a general treatise on chemistry in its special relations to engineering. The book, as it stands, will be very useful to those who require a handy and concise *résumé* of approved methods of analysing and valuing metals, oils, fuels, &c. It is, in fact, a work for chemists, a guide to the routine of the engineering laboratory, but a treatise on engineering chemistry in its proper sense it is not.

The opening chapter is devoted to "Redrop's System of Re-agents," in which all test solutions are prepared in such a way as to contain a milligramme of re-acting substance in one cubic centimètre of solution, or an equivalent in one litre. The advantage of the system is that all solutions of re-agents have thus a definite relation to each other, and, if only the system were universally adopted by analysts, the too often discreditable discrepancies in the results obtained by different chemists working upon the same material would be, at any rate, lessened. The personal equation cannot, of course, be altogether eliminated, but Redrop's system would prevent one serious cause of error.

Methods for the analysis of metals, alloys, &c., naturally occupy much space. These are generally well selected, and the directions given are precise. It is interesting to observe what very minute traces of impurity modify the character of various metals. Take, for instance, copper. The author gives analyses of two samples of the metal, as follows:—

	No. 1.	No. 2.
Antimony	0·200	0·002
Arsenic	1·010	0·020
Bismuth	0·045	0·021
Iron	0·020	0·005
Lead	0·085	0·023
Nickel	0·083	0·069
Silver	0·010	0·014
Sulphur	trace	nil
Tin	,,	0·018
Zinc	,,	nil
Oxygen	0·055	0·023
Copper (by difference)	98·672	99·805
	100·000	100·000

No. 1 was a sample that had done good work as a locomotive fire-box, a purpose for which the purer No. 2 sample would be altogether unsuitable. In the specification for copper-tube plates for the Indian State railways, more than 0·5 per cent. of impurities will ensure the rejection of the samples, and yet upon these impurities the practical value of copper largely depends, the pure metal being far too soft for most purposes.

In the portion devoted to the analysis of steel, we are reminded of a fact that is at times overlooked, viz., that it is not always possible by chemical analysis to reveal the cause of the brittleness of a particular piece of steel, the breaking being at times due to hidden flaws or some peculiar physical condition. Several instructive and suggestive examples are given, illustrating the uneven distribution of impurities through an ingot of steel, the top containing a considerably higher proportion than the bottom.

Under "Analysis of White Lead," we are told that "dryers" are "a compound which may contain anything in the shape of matter, often of doubtful efficiency." This is an example of a slovenly and obscure sentence, too many of which disfigure the work.

Part III., devoted to "Fuels,—Solid, Liquid, and Gaseous," is a valuable *résumé* of practical information upon the subjects treated of. A large number of useful tables are given, showing the comparative values of different fuels. Descriptions and illustrations are given of Holden's "Liquid Fuel Injector," and of MacAllan's "Variable Blast-pipe," the latter an ingenious economiser of fuel on locomotives, the blast being under the control of the driver, who can modify it according to the amount of work required to be done.

Part IV. relates to waters for boilers and for drinking purposes. Those methods of examination are given that have survived the test of experience. The section will be found useful to many others besides engineering chemists.

In Part V. oils are pretty fully discussed, or rather the various methods of valuing them. It is interesting to note that, according to Watson, colza and neatsfoot oils are the most corrosive for iron, whilst olive and linseed do the greatest injury to copper. The extent of the action of oils upon metals is directly proportional to the amount of free fatty acids present, and most of the fatty oils act upon copper more rapidly than upon iron.

The comparative value of illuminants is dealt with, and, on the authority of Redwood, it is shown that, taking petroleum at 1s. per gallon, and coal-gas at 3s. 6d. per 1,000 cubic feet, a given amount of light from the latter costs about twice as much as that from the former.

Creosote, as used for the "pickling" of timber, is discussed, and the following advantages are, according to Dr. Tidy, claimed for the process:—

1. Increased solidity by choking up the pores of the wood and a lessened liability to absorb water.

2. Germinal life is prevented from developing in the timber, and the tar acid coagulates the albuminous and easily-fermentable principles in the wood.

The book is full of good things. As a handbook of technical analysis it is very welcome. If a new edition should be called for, the literary style might be improved, and space devoted to mortars, cements, &c., while the title might be made more descriptive of the scope of the work.

Popular Electric Lighting, being Practical Hints to present and intending users of electric energy for illuminating purposes, with a Chapter on Electric Motors. By Captain E. Ironside Bax. London: Biggs & Co. 1891.

THE cover of Captain Bax's little book, appearing in booksellers' windows at this season of the year, may lead casual observers to suppose that the contents are devoted to Theosophy or fairy tales. Light from the sun, and an incandescent lamp of still greater candle power, falls upon a planet with miraculous effect. Portions of a brilliant meniscus appear where light from neither source could reach by any known laws of optics, while the part facing them remains in darkness. Intentional romance is, however, confined to the cover; the text is perfectly serious.

The author aims "to supply to those who contemplate substituting electricity for existing luminants, as well as those who have already made the change, such information as is not readily obtainable without reference to many sources." Seventeen pages are devoted to a glossary "intended for the use of those who have no knowledge whatever of electricity." Considering the very great difficulty of defining technical terms in a manner both popular and accurate, Captain Bax is to be congratulated on the result. Although the author says he has obtained assistance from Professor Houston's "Electrical Dictionary," he has avoided some of the errors which disfigure this useful work. Thus, Captain Bax correctly defines the *watt* as a unit for measuring power, and the *watt-hour* as a unit of energy, instead of considering both to be units of work, as is the case in the dictionary. In the chapters which follow is to be found just such practical information, expressed in simple language, as is needed by anyone who is thinking of using the electric light for the first time. The first thing which has to be decided is, obviously, the number of lamps required in each room. This is easily done: "A sixteen-candle-power lamp is usually found sufficient for a room 10 ft. long and 10 ft. wide, the lamp being raised from 6 ft. to 10 ft. above the floor line." The next question that arises is that of the cost. Five typical estimates are given in an appendix, and from one of these a shrewd guess of the expense entailed can be made. On this point some very timely advice is given:—"An unusually low estimate should always be regarded with suspicion, as no firm of even moderate repute will undertake to carry out wiring at prices which, in order to admit of a profit, must necessitate some or all of the following tricks being practised." The wickednesses indulged in by contractors who send in low estimates cannot be quoted here, but they may be read with advantage. More needful still is the warning given, which is, unhappily, too often necessary, even when high-priced firms are employed, that attempts are made to make a contract pay by means of extras: "The estimate should also include all fuses, switches, and lamp-holders, and there should be a distinct understanding with regard to any plastering and making good which may be necessary." The reader is also reminded that the whole installation should pass the tests of the insurance and supply companies before being paid for.

The few passages quoted give a fair idea of the general style of the book, and, as long as Captain Bax appears as the instructor of the electrically-ignorant householder, he is thoroughly reliable; but the author is the General Manager of a Supply Company which has adopted a low-tension system with storage, and which competes for its customers with a company using high-tension. He appears also as a strong advocate of "low tension," and as such his words must be received with caution. One of the great advantages usually claimed for "high tension" is that the central station can be placed at a considerable distance from its customers, who will not then be annoyed by having powerful steam-engines and dynamos for their immediate neighbours, and be constantly subjected to the annoyance of coals and other heavy goods being carted through the district. The author evidently does not consider this, for "it is manifest from these remarks what an advantage is gained by obtaining a supply of current from a central station situated at no great distance from the consumer's house, when, if any *contretemps* should occur, expert assistance is immediately available." Let us hope that the inhabitants of London or other large towns will not be seized with the desire to have their gasworks in their midst, so that they can send to them instead of the nearest gasfitter in case of accident. Throughout the whole volume an opportunity of having a sly hit at "high tensions" is never missed, but it would be unfair to give undue prominence to these blemishes in an otherwise admirable and most useful book.

Per Lineam Valli: A New Argument touching the Earthen Rampart between Tyne and Solway. By George Neilson. Glasgow: William Hodge & Co. 1891.

Mr. George Neilson directs our attention once more to the great barrier against the inroads of the Picts constructed by Hadrian from the Solway to the Tyne, by the publication of his exceedingly readable little book. When our readers know that Mr. Neilson is a lawyer, they will perhaps guess that the volume is of a controversial nature, but we may say at once that the facts of the case are stated with perfect fairness, the arguments logically worked out, and last, but not least, there is an entire absence of the personalities which sometimes disfigure archæological controversy.

The question with which Mr. Neilson occupies himself is the determination of the object for which the barrier was constructed, as revealed by its cross section. This section, taken from south to north is as follows:—(1) south agger, (2) level piece of ground, (3) marginal mound at edge of fosse, (4) south fosse, (5) berm, or level piece, (6) north agger, (7) level piece with military way in centre, (8) stone wall, (9) berm, and (10) north fosse.

There is no difficulty about the stone wall. Every one agrees that it was intended as a line of defence against the north, and that it was built by Hadrian. The problem upon the solution of which the different authorities are divided is as to the meaning of the earthen ramparts constituting the vallum. Dr. Bruce follows Horsley in thinking that the earthen vallum was constructed simultaneously with the stone wall for a protection against the south, as the wall was against the north, so that the whole constituted one long camp from sea to sea. Mr. Neilson's theory is that the south agger and fosse formed the original vallum, and that they were made as a temporary defence against the north, for the protection of the quarries and soldiers during the construction of the permanent works to the north, which consisted of a military way protected by the stone wall and fosse on the north and an

earthen agger and fosse on the south, the fosse being the same as that previously used for the temporary vallum.

Mr. Neilson's arguments seem to us to be very strong, if not actually convincing. At any rate the matter is well worth threshing out, and we strongly advise our readers when next they get a holiday and fine weather to make an excursion "per lineam valli" with Dr. Bruce's excellent "Handbook of the Roman Wall" in one pocket and Mr. George Neilson's canvas-backed little volume to balance in the other.

Exercises for Technical Instruction in Wood-Working. Sets I., II., III. Designed and drawn by H. JAY, Technical Instructor Nottingham School Board. Arranged by E. R. KIDSON, F.G.S., Science Demonstrator Nottingham School Board. London: Longmans, Green, & Co.

THESE exercises take the form of isometrical projections of various joints and articles of carpentry and joinery, carefully drawn on both sides of cards, to which are added a few lines of direction as to the course to be pursued by the student. These cards are arranged in sets, and are contained in cloth cases. The absence of any preface or statement as to the intentions of the authors gives rise to some doubt to whom the instruction is intended to be given, whether to the beginner with no previous experience in the use of tools, or to the apprentice who has other opportunities of acquiring this experience. There seems to be no better way for an apprentice to learn the details of his trade than the good old-fashioned method of working on the opposite side of a bench at which a good workman is employed, and no sets of cards of instruction can be expected to rival this method.

The cards seem deficient in particulars of the methods of using tools, and terms are used without explanation, which would be quite unintelligible, except to the more or less initiated. For instance, one of the cards refers to the making of a dove-tailed box. Dove-tailing appears intricate, without a few explanations which make it a comparatively easy matter, and these explanations are conspicuous by their absence.

A set of cards, devoted exclusively to the illustration of the principal tools of the trade would, in our opinion, have increased and extended the sphere of their value. There are many little tricks which once grasped make the management of planes, chisels, gauges, and other tools comparatively easy, and progress in the art of joinery a matter of time and attention, and many of these hints might have been embodied in the directions.

The three sets are carefully graded, and from the preparation of a square piece of wood, extend through a long series of joints, which are very clearly shown, until the making of a door is described in some detail.

These sets of cards may be of use as examples of work to be carried out by students at home, but by no means can they supply the place of a competent instructor.

Correspondence.

To the Editor of THE BUILDER.

AMERICAN ARCHITECTURE.

SIR,—In a paper read by Mr. Brodie at the last meeting of the Architectural Association some allusion was made to a book of design published by Messrs. Palliser, of New York.

Some time ago the present writer was led to purchase this book, and a warning may well be offered to those who may be induced by Mr. Brodie's recommendation to do likewise.

In England we have had some difference of opinion as to whether architecture may be considered as an art or a profession, but it has been reserved for America to present us with architecture as a trade.

Messrs. Palliser's book possesses all the attributes of a trade advertisement of the most advanced type, and the doggerel verses of dedication so naïvely quoted by Mr. Brodie may be aptly classed with the poetical effusions in praise of Sapolio or Pears' soap.

In the preface of the book the advertising tradesman is still more apparent. Here we find the well-known warning of the advertiser against "worthless imitations," and we should hardly be surprised to find, "See that the capsule is marked Palliser & Co., without which none are genuine," or some such stock phrase. The conclusion of the preface is, perhaps, worth quoting:—

"Speaking of Home, what tender associations and infinite meanings cluster around that blessed word. Home—the temple of love, the nursery of virtue, the circle of loving hearts, the playground of children, the dwelling of manhood, and the retreat of old age."

And all this obtainable from Messrs. Palliser at so-much and six, as per catalogue, we mentally add.

Turning to the drawings of nearly 250 "new and original designs" and the 1,500 detail drawings (as set forth on the title-page) of boasted artistic tastefulness, we find every species of architectural horror conceivable, and, though a few designs are passable, what are they among so many?

As a final stroke, we are presented with a sketch of a cottage described in the following charming way:—

"Palliser's modern eight-room cottage, with tower, shows also how it can be built, if desired, with only six rooms, and also without tower, *and not materially affect the appearance.* Plans, elevations, and details to scale, properly figured, &c., 50 cents."

This will need no comment beyond the italics which I venture to introduce. It is refreshing to learn that 75,000 copies of this plan have been sold to a confiding public, and that some towns have two or three of these cottages in different shapes.

After the perusal of such a volume as this, one cannot help feeling sincerely thankful that the production of such a book in England at least is not yet possible; and, though we may not be qualified to pronounce an opinion on American architecture, the publication without protest, and the apparent popularity, of "Palliser's Cottage Homes" book is a sufficiently significant fact to an observant mind. X.

THE DISPUTE IN THE BUILDING TRADE.

SIR,—The result of the reference of this dispute to the President of the Royal Institute of British Architects has probably surprised no one. The selection of an arbitrator affords an opportunity for the exercise of skill and tact such as is not always shown; when it is displayed, the decision of an arbitrator so selected may be pretty safely forecast. It has been rumoured that the selection in this case was the more readily agreed to by the trades union because the trial of endurance was getting to be too much for the workmen.

The decision strengthens the opinion of those who hold that the points in dispute involved such comprehensive issues that they should have been submitted to a Board rather than to an individual; indeed, it is difficult to name any one professional man capable of dealing effectually with such a question. The combination of faculties consequent upon varied experiences is peculiarly necessary for the solution of such questions.

That this award will be accepted as final no rational person believes.

The resolution passed at a special meeting of the London Building Trade Committee, to which you refer in your last issue, expresses quite clearly the intentions of the trades unions, and it cannot be doubted that the recent advantages which have been wrested from the unwilling capitalist will make the trades unions eager for more.

The apathy of public opinion on such questions, unless they immediately affect its convenience, and its irrational sympathy with the strikers, adds to the difficulty of opposing the demands of the men. And all experience shows that the unscrupulousness of such agitations increases with every success, and is fostered by interested demagogues touting for political support.

It may safely be asserted that no considerations of the apportionment of profit, except the most ridiculous ones, affect the avid desire of the worker for as high a wage as can be squeezed out of the weakness of the masters in return for the smallest quantity of work that can be given in exchange.

Mr. Walter Besant, in one of his novels, makes one of his characters say that if the working-men know what they want, intelligently combine, and determine to get it, they can obtain anything they like to ask for.

In the present condition of the electorate, this is probably true, and, if so, there are strong reasons why, both in the interest of architects, surveyors, and builders, as well as those of the men, some effort should be made to withstand such demands as those now in question.

It needs but little argument to show their unreasonableness.

The labour of the building operative is not relatively hard; it compares favourably with that of many other classes of hand workers, and of the humbler professional assistants; moreover, his hours have been shortened. It is not many years ago since he worked until 5·30 on Saturdays; now he stops work at twelve. His wages have gradually risen, and his treatment generally is better. All this he owes to the trade union, and to the gradual amelioration of the laws affecting labour; these facts are, or should be, matters of satisfaction to all parties concerned. That the trade unions have done good may be admitted. They have asserted the independence of the worker, and improved his position, but, when they claim the right to dictate terms entirely beyond their province, to regulate the rates at which contractors for public bodies shall pay their men, and promulgate such unwritten laws as make it dangerous for a man to do much more work on a building in a day than his fellows, at the same time taking no heed to maintain or improve the quality of the work of its members, natural common-sense revolts at such an attempt on the part of one class to impose its will upon other classes to the damage of the general trade of the country and the subversion of freedom of contract, which should be regulated, if at all, by Act of Parliament. France, in the last century, and Ireland, in this, are modern illustrations of the principle that no tyranny is comparable with the tyranny of a democracy.

If the existing evils, and the greater ones to follow, were realised, the classes connected with the building interests would probably be more anxious for a remedy; and, indeed, perfunctory remedies of various kinds have been tried.

What is now wanted is something of a more drastic character.

The success of the trades unions may be mainly referred to the want of combination among the builders, and the indisposition of the architects and surveyors to assist.

The interests of all three classes are identical. In circles familiar with the subject there is a pretty general consensus of opinion that the building operative is, compared with other trades, paid beyond his value. Moreover, builders' work costs already more than it should do, and very much more than it did a comparatively few years ago; each reduction of the hours of labour, each increase in the rate per hour, is a warrant of further increase, everyone of which will operate to lessen the number of buildings; and, as they become a more and more expensive luxury, will increase the unwillingness of persons to build unless forced to do so.

It appears reasonable that the Royal Institute of British Architects, the Surveyors' Institution, and the Association of Master Builders, should be affiliated with the definite purpose of regulating the building trades and settling disputes. By this, I mean a real connexion for the prosecution of their common interests, not a mere series of interviews of a small committee of two of these bodies for the discussion of comparatively unimportant points of business relation.

A vigorous attempt should be made by the Association of Master Builders to comprise all the builders in Great Britain. This might be assisted by the reduction of the annual subscription, and by making the advantage of the connexion more tangible by offering special advantages in the way of accident assurance and of legal defence.

If such an association of classes could be brought about, and should set itself to enlighten the general public on the question, and enlist it on its side, some Parliamentary measure for the regulation of labour disputes would be within the range of possibility; for although in the electorate the sympathisers with the operatives are in the ascendant, some years must elapse before the majority of Members of Parliament will be drawn from any class different to that which now constitutes the House of Commons, while we may safely affirm that their sympathies are with capital, and that their education has embraced some at least of the principles of political economy, and this affords some hope that effectual legislation is practicable.

The increasing severity of trade disputes indicates the necessity of a measure for their settlement, and the various abortive attempts of recent years in that direction are further proofs of the extension of that opinion.

Indeed, the process of a trade dispute in Great Britain may be reasonably compared with the barbarous period of settlement of personal quarrel when courts and judges as yet were not, and, until adjustment of trade contentions is compulsorily referred to a competent tribunal, by which I mean a combination of technical and economic experts, one may entertain grave doubts of the vaunted civilisation of the nineteenth century.

I may remind your readers that years ago your journal advocated the establishment of trades boards of conciliation, and has steadily urged the adoption of the principle.

Such a combination as I have above suggested may largely affect legislation in that direction.

The shameful waste of temper, time, and money induced by a strike, besides the inevitable misery entailed upon helpless women and children (bearing, as usual, hardest upon those least able to bear it), should enlist our earnest endeavour.

The solution of the difficulty appears to me to be the establishment of a court to which reference shall be compulsory, whose decision shall be without appeal, and capable of enforcement, whose judges shall be technical experts, who shall, so far as

possible, be free from prejudice (which an arbitrator seldom is), and the enforcement of its decisions by pecuniary penalty or the imposition of civil disability.

No penalty could be directed against withdrawal of capital, such as often occurs when the rise of wages makes the employment of labour unremunerative, but the continuance of a business in question should carry the obligation to pay the decreed rate of wages, or to observe the hours and conditions imposed by the award.

The recalcitrant workman could not be directly compelled to work; indirectly he might be by such means as the following:—

By the giving of Government assistance for the conveyance of workmen, either from other countries or distant parts of Great Britain at the public expense.

By the refusal of parochial relief, except in the workhouse, to men declining to work.

By the enforcement of the Vagrancy Laws against such men begging in the streets while work was waiting their acceptance.

The deprivation of electoral rights, and the punishment of overt acts like picketing, or notices to firms, tending to oppose the operation of the award.

Such suggestions as the foregoing may appear to many a return to the worst principles of past legislation, but the reign of law is of paramount importance, and when the magnitude of the interests involved is considered, no sacrifice of individual liberty should be allowed to weigh against its assertion, and the consequent suppression of that licence which pretends to be liberty.

JOHN LEANING.

"ROGERS *v.* JAMES."

SIR,—I venture to think that the conclusions drawn by Mr. Rogers while smarting under his defeat in the Court of Appeal in the above case, as reported in your last issue (and No. 3 in particular), are not wholly sound; and the case is of sufficient importance to warrant special notice being taken of it in your valuable journal.

It is unsafe to speak too definitely upon the faith of a *Times* report, but enough can be gathered from the published statements to make it clear that the verdict of the jury at Maidstone exercised on the minds of the Judges of Appeal the influence such a verdict invariably has; and it was "not the question" with the Master of the Rolls "whether the Court of Appeal would have arrived at the same verdict." I may go farther, and suggest that it quite possibly might not have done so.

An architect, or any other professional man, is not held responsible by the law for an error of judgment, if the error is *bonâ-fide*, and the architect has employed the best of his skill: the onus lies upon the employer, who engages a man of indifferent skill; and the case in question does not seem to have been argued on that ground.

If Mr. Rogers had said,—"In my judgment the foundations proposed are unnecessary," and had thereupon given the builder a written order to omit the foundations, I submit that his position would have been inexpugnable, and that his client could have come upon him for damages only in the event of a settlement or failure, and even then, I believe, with little prospect of success.

I have known of a somewhat similar case where the value of the omitted work was *not* deducted from the builder's account, and still the architect was held blameless by the referee (a legal gentleman of high standing) when sued by his client.

HENRY NORTHCROFT.

The Student's Column.

MARBLES.—XXIII.

BELGIAN MARBLES.

THE geology of Belgium is remarkably diversified; for our purposes it may be divided into two parts, the separating line between which approximately follows the valley of the river Meuse from Liége to Namur, and from thence to Tournai. The country north of this imaginary line consists wholly of Tertiary beds, with the exception of certain local developments of Secondary and Primary formations in the southern and eastern portions of the area. The Tertiaries there are mainly sands and clays, and do not contain strata of sufficient hardness to make a marble fit for commercial purposes. South of that line, with the exception of the district round Mons, we find nothing but Primary or Palæozoic rocks, which form the backbone of the Ardennes. Devonian and Carboniferous especially, are well exposed, and from these formations the bulk of the Belgian marble is derived. Most of the black marble comes from the neighbourhood of Golzinnes, near La Bussière, the deposits near which place extend for a length of about eight miles in a direction west and east from Villeret-sous-Saint-Martin-Balâtre, as far as Rhisnes. The best description, with which the writer is acquainted, of the marbles of this area is in the work on "Marbles" by Mr. Arthur Lee, to which the student is referred for detailed information. That author states that the marble beds are of a total thickness of from 30 ft. to 40 ft., and comprise twenty-five to thirty layers, each from 4 in. to 2 ft. in thickness. They are separated by other layers, called "Bancs de croûtes," which are formed of a thin slate-like substance of no value. The best marble is found in the lower layers, each of which is called by a special name, according to its position and thickness. The black marble of Dinant has long been known; great quantities of it are sawn up into thin slabs. Near Basècles, Quévaucamps, and Péruwelz, close to the French frontier, a number of quarries in black marble have been opened up. At Roisin, in the valley of Hogneau, a very handsome material, known as "Belgian Grande Antique" occurs; the ground is black, with white veins running through it. Another well-known stone is the "Blue Belge," a dark bluish-black marble, in which fine white veins are developed. It is raised at Bouffioulx, near Châtelet, Grand Marchin, and other places. A fossiliferous dark stone is found near La Bussière; a reddish brown, known erroneously as "Jaune Oriental" occurs at Bioul; and "Brêche de Waulsort" is a fine brecciated variety, quarried near Hastières. The so-called St. Anne's marble is largely exported to England, and has long enjoyed a reputation as a good, sound material. There are several kinds of this stone, but it may be generically described as having a dark grey ground with lighter places, and the whole being veined and interspersed with whitish patches, where the structure of the organic remains of which it is composed is clearly discernible. Quarries of this marble are near Charleroi, and at Gougines, Biesmes, and La Boussière (near Erquelinnes). Mr. Lee states that the annual production of the last-mentioned quarries is about 35,000 cubic feet, and that of the Gougines district 53,000 cubic feet. Belgian "reds" also are very well known in England; they flourish under several distinctive titles, such as "Rouge Royal," "Rouge Griotte," &c., and vary in colour from a dark-brownish red ground with white veinings to light brown with patches of white and irregular veins. The chief quarries are situated near Philippeville. For its size Belgium is notable for an abundance of ornamental stones, and they are indefatigably worked. Cheap labour and good railway communication are unquestionably amongst the factors which have largely contributed to the successful development of its marble industry.

FRENCH MARBLES.

France, also, is very rich in marbles and decorative stones, which have been worked from time immemorial. That known as St. Béat (Garonne) is a true statuary, and although it cannot compare in fineness with the more fortunate Italian kinds, has, nevertheless, much to recommend it. Many French sculptors are very partial to the use of the material. The same quarries produce a greyish-white stone. The marble known as "Griotte" takes its name, according to Violet,* from the griotte cherry, owing to its brilliant red colour. When, as frequently happens, the uniform redness is broken by small white spots, it is called "Griotte œil de perdrix." Some kinds are traversed by white veins, but these are regarded as defects, and are not so highly prized. The material is exploited in several localities in the French Pyrenees, especially in the valleys of the Barousse and the Pique, at the bridge of the Taoulo, and near Prades. It is used for all manner of interior decorative work in France, and is, perhaps, better known in England than any other French marble. Considerable quantities are exported also to the United States. The finest quality of "Griotte d'Italie" comes from Bourriette, between Cannes and Félines. A marble of a brilliant scarlet colour, blotched with white and known as Languedoc, or French red, is found in the Montagne Noire, between Lésignan and Carcassone, where it has been quarried since the sixteenth century. It is obtainable in blocks of considerable size. "Rouge Antique" is the name of a stone quarried at Villerembert and Cerp, which is used principally in the manufacture of small articles; the balusters of the grand staircase of the Paris Opera-house are constructed of it. A highly-esteemed marble is that of Sarrancolin a red stone with dove-coloured markings, exploited at Ilhet, Berede, and other places in the vicinity. It was extensively used in the Opera-house, and in other large Parisian buildings. A black and white marble from St. Girous, on the river Lez, is called "Grande Antique"; at Aubert there are traces of Roman occupation, and undoubtedly the stone was largely raised by these conquerors of Gaul. "Brocatelle" is found near Molinges, in the Jura; the "Violet," as its name implies, has a ground of that colour, and is veined and marked with yellow and white; whilst the "Jaune" is very fine and compact, of a light yellow colour traversed by irregular veins and blotches of dull red. It is further variegated by patches or nodules of white crystalline calcite. The stone is stated to be difficult to extract. A handsome material found in the same neighbourhood, and somewhat similar in appearance, is "Jaune Lamartine." The marble known as "Brêche St. Antonin," is raised near Aix; its prevailing tint is a mixture of yellow, red, and brown; "Vert Maurin" is a fine green stone from Maurin in the Alps near the Italian frontier; and "Rouge du Var," which has found its way into the English market in considerable quantities, is a red mixed with yellow. The French Ardennes produce many kinds of stone, especially at Jeumont near the Belgian frontier; and near Boulogne, also, much marble is raised. We have not the space to allude to even the principal French marbles, but the foregoing will serve to show that great abundance and variety exist; the exportation of several is indicative of the businesslike capacity which pervades the whole of the marble trade of our Gallic neighbours.

* "Les Marbres," &c. Rapports sur l'Exposition Universelle, 1878, xxviii., p. 15.

SCANDINAVIAN MARBLES.

Such mountainous countries as Sweden and Norway could not fail to possess a large number of hard rocks capable of taking a good polish; but they are not much worked except in the southern half of Sweden. Of this latter district we may mention the quarry of Claestorp where a limestone intermixed, or filled up with veins, streaks, dots or flames of variously-coloured serpentine — not unlike certain kinds of Irish marble—is obtained. Ophicalcites are also found at Kolmården, where for many years they have been worked into pillars, pedestals, &c. The outer portico of the National Museum, Stockholm, is of this material, as well as the columns of the Royal Post-office. The stone used for these and similar architectural purposes is chiefly brought from the so-called Bruksbrott, which is situated close to the marble works. For the whole of the interior adornment of the staircases, vestibules, &c., of Stockholm Royal Palace, marble from the Limbrott was used; but this quarry has not been worked for upwards of a century. Many beautiful marbles occur near the town of Nora, but these, like those from Sala, do not seem to have yet attracted much attention from architects. The specific gravity of the different Swedish marbles is stated to range from 2·60 to 2·85.

The reputation of the handsome porphyry from Elfdal, in Dalecarlia, is world-wide. One of the varieties most esteemed exhibits red, blue, violet, and grey colours, and contains, in addition to crystals of felspar, others of garnet, titanite, magnetite, specular iron ore, and pyrites. The porphyries of this district are not so vigorously worked as formerly, however. A green stone, which has found its way into this country in large quantities, is raised at Warberg.

White marble from Vel Fiord, Hegge, north of Trondhjem, in Norway, is exported to the London market; it is a pure white stone, suitable for certain kinds of statuary.

THE ENGLISH IRON TRADE. — Unfortunately, there is little change to chronicle in the condition of the English iron market, inactivity still prevailing. A slight amount of business has been done on the Glasgow market in Scotch warrants; but makers' iron continues very quiet, and the Middlesbrough pig-iron market is inanimate, while dulness is the leading feature of the hematite pig-iron trade. Manufactured iron is in fair inquiry; but the tinplate trade is still without animation. The demand for steel remains quiet. The shipbuilding trade is well employed; but the engineering industries continue to show signs of decreasing activity. The coal trade is somewhat inanimate.—*Iron.*

GENERAL BUILDING NEWS.

NEW CHURCH, BUDLEIGH SALTERTON. — The foundation-stone of the new church of S. Peter, Budleigh Salterton, was laid by Miss Mary Rolle, on the 24th ult. The church is being built by the Hon. Mark Rolle, from the designs of Mr. Geo. H. Fellowes Prynne, F.R.I.B.A., the builders being Messrs. Luscombe, of Exeter. The design is of early type, having a nave of five bays, 28 ft. wide, 40 ft. high, and 89 ft. in length, and a chancel 24 ft. broad by 40 ft. high, by 36 ft. long. It has north and south lean-to aisles. A double transept on the south side forms the nave to a small apsidal chapel. Organ-galleries and vestries are placed on the north side of the chancel, and a tower and spire rising to the height of 140 ft. is placed at the north-west angle of the building. The whole of the exterior and interior facings will be in wrought Devon limestone or marble. Exterior dressings will be in box-ground stone, and the weatherings and plinths in Doulting stone. The interior dressings will be in Beer stone. Polished Devonshire marble will be used in the columns and many of the smaller details of work. The cost of the present work will be between 7,000*l.* and 8,000*l.*; the tower and spire being left out for the present.

PLANT HOUSE, CHISWICK.—A new plant house at Chiswick Gardens has recently been completed. It was built by Messrs. I. Weeks & Co., of Chelsea, to whom the Council of the Royal Horticultural Society have accorded a special vote of thanks for its "economy and excellence."

INSTITUTE BUILDINGS, GARTSHERRIE, LANARK. —On the 14th ult. the new buildings at Gartsherrie, that are to be known as the Gartsherrie Institute, were opened by Mr. William Weir, of Kildonan. The main feature of the Institute is a swimming-pond, with baths, the pond extending over an area of 57 ft. by 27 ft. There are also a set of baths for both males and females, a public and private billiard-room, a reading-room and library, a bowling-alley, and a large open court fitted up for gymnastic exercises and outside sports. A janitor's house is attached to the main building, which is built to plans by Mr. James Davidson, architect, Coatbridge, in the Baronial style.

NEW CHURCH, BLAENRHONDDA, GLAMORGAN.— On the 9th ult. St. Alban's Church, Tynewydd, Blaenrhondda, was consecrated by the bishop of the diocese. The church, which is in the Early English style, and consists of a nave and chancel, has been built from plans prepared by Mr. Bruce Vaughan, of Cardiff. The nave and chancel are practically of the same width, while the chancel roof has coloured rafters and double principals. The edifice is constructed of native stone, with Bath stone dressings. The contract was carried out by Mr. John Haines, of Cardiff, at a cost of 1,500*l.* The church (which is built on a site given by Lord Dunraven) will seat about 350.

WESLEYAN BUILDINGS, AMBLESIDE.—The designs of Mr. Thomas W. Cubbon, of Birkenhead, have been adopted for a Wesleyan church and schools about to be erected at Ambleside, in the English Lake District. The church will have accommodation for over 400 adults, and the school will accommodate 300, in addition to which extensive class-rooms are provided. The buildings, which are Late Gothic in character, will be faced with local blue-stone, relieved by yellow sandstone dressings.

WELSH CHURCH FOR CARDIFF.—The Welsh Church of St. David's, erected at Howard-gardens, Cardiff, was recently consecrated by the Bishop of Llandaff. The church consists of a chancel 38 ft. 6 in. long, 22 ft. 3 in. wide; nave, 67 ft. long by 24 ft. 3 in. wide; and north aisle, 67 ft. by 11 ft. 6 in., and a vestry. The south aisle is not yet built, so that the nave arcade is temporarily built up with a stone wall. When this is built the church will seat 500 people. The aisle is divided from the nave by a moulded arcade, carried on octagonal stone shafts with moulded caps and bases. These arches are surmounted by a clearstory, pierced with two-light windows with traceried heads. The aisles are lighted with traceried windows of different design. The east window has five lights. The west window is similar in design. The roof of the chancel is barrel shaped and boarded underneath the timbers. It is constructed of unpolished pitch-pine, and divided into three bays with moulded arched ribs carried on stone corbels, carved with symbols of the Apostles. There are seven steps leading to the altar, which is made of oak, and the reredos is of Caen stone, made by Messrs. Jones & Willis; but this feature of the chancel yet remains to be completed. The sedilia, credence, and piscina are built into the south wall of the chancel, separated from each other by circular shafts carrying traceried heads. An arch, measuring 34 ft. to the apex, divides the nave from the chancel, and is moulded. The roof over the nave and completed aisle is also constructed of unpolished pitch-pine, the former being divided into five bays, with hammer beam principals filled in with tracery. The rafters and purlins are exposed and moulded, and a carved cornice is placed on the wall-line. The nave and aisle seating is executed in pitch-pine and the choir seats in English oak. The sanctuary, chancel and the passages in the nave and aisle have been paved with encaustic tiles by Messrs. Carter & Co., of Poole. The window-glass was supplied by Messrs. Campbell, Smith, & Campbell, of London. The font, which is placed near the north entrance, is of Caen stone. There is also an immersion font, 7 ft. long by 3 ft. wide, lined with white glazed tiles. The pulpit is of Riga oak, and was made by Messrs. Jones & Willis. All the stone and wood-carving with the exception of some of the wood patera and bosses in the chancel roof, which were executed by Miss N. C. Baker, is the work of Mr. William Clarke, of Llandaff. The heating apparatus was supplied by Mr. R. R. Gibbs, of Liverpool. The walls of the exterior are of a grey colour, and the roofs are covered with small green slates. The tower, which reaches a height of 100 ft., is placed on the north-east corner of the building, the spire being covered with slates. The principal entrance is on the north side of the church through a stone porch. There is also an entrance in the west front. Messrs. Shepton & Son, of Cardiff, were the contractors, and Mr. Bruce Vaughan, F.R.I.B.A., of Cardiff, was the architect.

BAPTIST CHURCH, MARYPORT, CUMBERLAND.—A new Baptist church, schoolroom, &c., situated in Station-street and Curzon-street, was recently opened at Maryport, Cumberland. The buildings have a frontage of about 90 ft. to Station-street and about 200 ft. to Curzon-street. The structure has been erected in red sandstone from the Aspatria quarries. The main entrances to the church are from Station-street. Over the principal entrance is a five-light window. At the north-west angle of the building is a tower, 60 ft. in height, with pinnacle at each corner 15 ft. high. The total height of the tower and spire when completed will be about 130 ft., but the spire will not at present be proceeded with. The plan of the interior of the church consists of a nave, two transepts and chancel. The nave is 76 ft. by 45 ft., covered by a roof in one span of hammer-beam construction, having arched ribs springing from moulded stone corbels, the spandrels on either side being filled in with ornamental fretwork. The ceiling line is about 38 ft. in the centre, and is of wagon-head shape, lined with pitch-pine boarding. The transepts are recessed 14 ft., each being divided from the nave by two stone arches, springing from a column in the centre. The chancel arch, which is of red and white stone and is about 35 ft. in height, has moulded jambs and carved capitals. The chancel is 22 ft. by 19 ft., and contains an open baptistry, tiled at the sides and bottom with glazed tiles. The pulpit is of oak. The chancel is lighted by a four-light traceried window, which is filled with stained glass by Messrs. Barnett & Sons, Leith. The other windows are filled with cathedral glass. The choir-seats are placed on either side of the chancel. All the fittings throughout are of pitch-pine. Sittings are provided for 700 adults. The heating is by means of Langfield's patent moist-air system. Ventilation is effected by means of air-pump ventilators on the roof. There are vestries for the minister, ladies, and deacons, each having a lavatory attached, and all arranged for convenient access to the baptistry. In addition to these rooms there is a church-parlour, and a lecture-hall capable of holding about 120 persons. The schoolroom is placed at the rear of the church. There is a room, 68 ft. by 29 ft., with two class-rooms, which by means of movable doors can be added to the schoolroom. Over these class-rooms is a gallery. In the basement is placed the kitchen, and having communication with the schoolroom by means of a lift. There is also a store-room on this floor, also the heating-chambers for church and school. The cost of the buildings will be about 5,000*l.* The contractors for the work were Mr. A. Mackenzie for mason work, Mr. John Kendal for joiner work, Mr. Thomas Mandle for slaters' work, Mr. T. Kirk for plastering and cementing, Mr. G. Armstrong plumbing and gasfitting, and Mr. J. Gordon painting and glazing, all of Maryport. Messrs. Minton, Hollins, & Co., of Stoke-upon-Trent, carried out the tiling of the chancel, vestibules, and baptistry. Mr. James Nelson, of Carlisle, supplied the marble work for the baptistry. The architect was Mr. C. Eaglesfield, of Maryport, under whose superintendence the works have been carried out. The stone carving was executed by Mr. John Hewson, of Maryport.

CATHOLIC CHURCH AT TRANENT, HADDINGTON. —The foundation-stone of a new Catholic church at Tranent was laid on the 11th ult. by Archbishop Smith. The church occupies a site at the eastern end of the village, and, with the presbytery, which is to be attached to it, will cost about 1,650*l.* The church, which will be in the Early Gothic style, from designs by Mr. Biggar, Edinburgh, will consist of nave and chancel, with side altars flanking the chancel arch, and will be seated for about 300 persons.

WESLEYAN MISSION CHAPEL, LEEDS.—On the 21st ult. a new Wesleyan Mission Chapel, in Church-street, Hunslet, Leeds, was opened by Mrs. Joshua Bramham. The buildings, which have been erected from the designs and under the superintendence of Mr. G. F. Danby, architect, of Leeds, occupy a site near the Hunslet station, and include a central mission-room, 31 ft. wide by 54 ft. long, and capable of seating 350 persons. The room is entered by means of glazed lobbies, and is lighted by windows at each end, and by dormer windows at the sides. Ventilation is provided by air inlets and exhaust ventilators in the roof, and the building is heated by steam pipes. Seven class-rooms of various sizes are placed on either side of the central room, including a ladies' work-room, 22 ft. by 16 ft., kitchen, apparatus-room, and various conveniences. A caretaker's residence has also been erected on the site. The buildings are faced with pressed bricks, with stone dressings, the internal woodwork being of pitch-pine, varnished, and the roofs covered with Bangor slates. The works have been carried out by Mr. B. Hutchinson and Mr. Joseph James, at a cost of about 1,450*l.*

PRESBYTERIAN CHURCH, WALTON, LANCASHIRE. —The memorial-stones of a new Presbyterian church in Spellow-lane, Walton, were laid on the 21st ult. The edifice is situated on the north side of Spellow-lane, and, when completed, it will be capable of seating 400 persons, together with school-room, class-rooms, and vestries. The entrances will be from Spellow-lane. The plan of the building is of a cruciform character, the nave being 57 ft. by 36 ft., and the transepts 15 ft. by 9 ft. The ceiling will be of an octagon shape, the main timbers of the roof being dressed. The pewing will be of pitch-pine. The style to be adopted is of a Romanesque character. The exterior of the building will consist of local grey brick and Ruabon terra-cotta dressings. The contractors for the works are Messrs. Hough & Pilling, and the whole will be carried out from the designs and under the superintendence of Mr. Richard Owen, architect, Liverpool. The total cost of the building is 1,800*l.*

MEMORIAL CHURCH, WILLINGTON QUAY, NORTHUMBERLAND. — On the 17th ult. the new Congregational Church, which has been erected at Willington Quay to the memory of the late Rev. William Stead, was opened. The church, which is at the corner of Bewicke-street, accommodates 400 persons. Part of the site is intended for schools and class-rooms, which will be erected later on. The building has been erected from designs by Mr. William Hope, architect, North Shields; Messrs. Smelt & Robson, Heaton, Newcastle, being the contractors. The church is built of free-stone, and consists of transepts and nave. It measures inside 60 ft. by 30 ft., and the height from floor to ceiling is 26 ft. The spire, which is at the south-east corner, is 70 ft. high. The seating consists of pitch-pine open benches, and the vestries are placed at the end of the organ-chamber. The windows are glazed with cathedral glass. The church will be heated by hot-water pipes on the low pressure system, and the foul air will be extracted by means of air-pump ventilators placed in the roof.

SANITARY AND ENGINEERING NEWS.

HUCKNALL TORKARD SEWERAGE.—The sanction of the Local Government Board has just been obtained to a loan for carrying out the Hucknall sewage scheme. The system adopted is that known as the "International Process," which has been applied in various towns throughout the country. In addition to the precipitation tanks and filter beds, eight acres of land have been acquired on lease from the Duke of Portland, over which, if found necessary, the sewage may be conducted. The purified effluent will find its way into the River Leen. The Local Board will obtain tenders for carrying out the works forthwith, the engineer being Mr. Herbert Walker, Nottingham.

REDRUTH WATER SUPPLY.—On the 3rd ult., Mr. H. Bertram Nichols, C.E., of Birmingham, the engineer selected by the Redruth Local Board to advise them as to a scheme for the efficient supply of water to Redruth, met the Board at the Board-room, and subsequently, accompanied by the members and the Surveyor, visited the various possible sources of supply, including Bolitho, in the parish of Crowan, with a view of preparing a scheme as desired.

LLANGEFIN SEWERAGE AND WATER SUPPLY. —At a meeting of the Llangefin Local Board held on the 27th ult., it was resolved to instruct Mr. Charles H. Beloe, M.Inst.C.E., of Liverpool and Westminster, to proceed with the details of the plans necessary for the sewerage and water supply of this place, and to open negotiations with the landowners for the purchase of the land required forthwith. Mr. Beloe's plans were selected by the Local Board out of the six sets of plans submitted to them by engineers in various parts of the kingdom.

THE SANITATION OF STOCKHOLM.—The Corporation of the city of Stockholm has decided upon erecting sewage works at the Riddersvik, for the treatment of 55 tons of sewage matter a day, or 16,500 tons a year. The works will be established on the Podewisk system, as adopted in Augsburg, and they are similar to the latter. The cost of the buildings is estimated at 3,550*l.* that of the machinery 6,800*l.*, and the total cost at 11,300*l.* The working expenditure, &c., is estimated at 7,200*l.* The returns of the sale of the produce as manure is estimated at 12,500*l.* a year, which would leave an annual profit of 3,250*l.*, or about 4*s.* per ton of the fæcal matter treated. It is, however, anticipated that a profit of 5*s.* per ton may be realised, the estimates having a wide margin. The process of treatment is carried out

COMPETITION, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITION.

Nature of Work.	By whom Advertised	Premium.	Designs to be delivered.
*Draining of Cairo	Government of Egypt	200*l.*	Jan. 31

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor or Engineer.	Tenders to be delivered.
*Road Works	Southend Local Board	P. Dodd	Dec. 5
Piling and Forming a Weir	Swansea Harb. Trus.	*Official*	Dec. 8
Cast-iron Pipes, Steel Castings, &c.	N. E. R. Co.	do.	do.
Road Works	Plymouth Corp.	G. D. Bellamy	do.
Additions to Farm, Buchromb, Dufftown, N.B.	Gen. Sir P. Lumsden	.....	do.
Galleries, Baptist Chapel, Cathays, Cardiff	Rev. C. Griffiths	J. P. Jones	do.
Private Improvement Works	Halifax Corporation	E. R. S. Escott	Dec. 9
Alterations and Additions to Viaduct Hotel, Crumlin, South Wales	Evan Lewis	T. C. Wakeling	do.
*Lowering Present Headings in Wells	East Grinstead Gas & Water Co.	E. Easton & Co.	do.
Additions to Farm, Bardonside, Birnie, N.B.	John Smith	.....	do.
Road Works	Cardiff Corporation	*Official*	do.
*500,000 Clamp Bricks	Tonbridge Union	do.	Dec. 10
Subway and Retaining Walls at Littleborough; New Road and Alteration to Buildings, Hipperholme	Lancs. & Yorks. R. Co.	do.	do.
Reception Hall, Exeter	.....	Jas. Jerman	do.
New Stores and Three Houses, Brudenell-grove	Leeds Indus. Co-op. Soc. Lim.	.....	Dec. 11
Sewerage Works	Dodworth Local Board	Wade & Turner	Dec. 14
Street Work	Batley Town Council	J. W. Horsfield	do.
*Unclimbable Wrot-iron Railings	East Ham Local Board	— Savage	do.
*Road Works	Tottenham Local Bd.	J. E. Worth	Dec. 15
*Erection of Office, Rosebery-avenue	LondonCountyCouncil	*Official*	do.
*Block 1 Admiralty Buildings	H. M. Works	do.	do.

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Sanitary Pipes, Cement, &c.	Newcastle-upon-Tyne Impt. Com.	*Official*	Dec. 16
Additions and Improvements, Wallsend Station	N. E. R. Co.	Wm. Bell	do.
*York Paving Stone	Mile-end Vestry	J. M. Knight	do.
*Sinking, &c. Well	Leighton Buzzard Lt. R. B.	B. Nichols	Dec. 18
*Building and Completing School	New Secondry Schools, Guernsey	F. Whitmore	Dec. 19
*Waterworks Extension	Leominster U.S.A.	*Official*	do.
*Works and Materials	Parish of St. George, Hanover-square	G. Livingstone	do.
Drainage, Bevois Valley	Southampton Corp.	W. B. G. Bennett	Dec. 21
*Additions to Municipal Buildings	Rochester Corporation	F. F. W. Goldsmith & E. J. Gosling	do.
*New Municipal Buildings	Borough of Croydon	C. Herman	do.
*88 Quarters for Married Soldiers, &c. &c.	War Department	*Official*	No date
Shops and Houses, Flatts, Norton-in-the-Moors	.....	Elijah Jones	do.
House, Kippax, near Leeds	.....	F. W. Rhodes	do.
Seven Cottages, Kippax, Leeds	.....	R. J. Smith	do.
Banking Premises, Park-row	Leeds Joint-Stock Banking Co.	Ambler & Bowman	do.
Three Houses, Carr-road, Little London, Leeds	.....	John E. Preston	do.
*Married Soldiers' Quarters, Devonport	War Department	*Official*	do.
Six Dwelling-houses and Sale Shops, Walkley, Sheffield	.....	W. J. Taylor	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Clerk of the Works	St. Pancras Vestry	Not stated	Dec. 7
*Additional Sanitary Inspector	St. Saviour's B. of W.	130*l.* to 150*l.*	Dec. 16

Those marked with an Asterisk (*) are advertised in this Number. *Competition*, p. iv. *Contracts*, pp. iv., vi., *and* viii. *Public Appointments*, p. xx.

in air-tight chambers, the fæcal matter not coming in contact with the air from the moment it enters the factory until completed, dry, odourless, and ready for use.

STAINED GLASS AND DECORATION.

RESTORATION OF SCREEN, MANATON. — The ancient fifteenth-century screen in Manaton Church, which is situated on Dartmoor, five miles from Moretonhampstead, is to be restored. The screen is one of the finest in Devonshire; it runs the whole width of the church, and still has a good deal of the original colouring. The restoration has been placed in the hands of Mr. Edmund Sedding, architect, Plymouth, and Messrs. Rashleigh, Pinwill, & Co., of the same town, have been entrusted with the work.

STAINED-GLASS WINDOW, LEWISHAM PARISH CHURCH.—A stained-glass window has been placed in the chancel of Lewisham Parish Church as a memorial to the late Earl of Dartmouth. It is the gift of the Bishop of Lichfield, and illustrates the subject of the Nativity of our Lord, and in the background the Angel appearing to the Shepherds, surmounted by an architectural canopy in keeping with the style of the church. The work was designed and executed by Messrs. Warrington & Co.

MEMORIAL WINDOW, JEDBURGH PARISH CHURCH. —A stained-glass window has just been put in the south aisle of Jedburgh Parish Church in memory of the late Mr. James Stevenson, and of his wife. The window is by Mr. Ballantine, of Edinburgh.

FOREIGN AND COLONIAL.

FRANCE.—It is announced that the President of the Republic is shortly to open in person the new railway line between Epinac and Laumes.——M. Antonin Carlès, the sculptor, has been commissioned by Commander Hériot to execute a monument for the Château de la Boissière, where there is a military orphanage. The monument, the model of which is finished, shows a warrior falling mortally wounded against a broken cannon, and brandishing his sword. By him a female figure in a helmet and antique drapery offers him a crown of laurel. The work will be placed in the park of the Château, on a marble pedestal.——The Municipality of Epinal (Vosges) has petitioned the Minister of War against the erection of the proposed fortifications there, which will be very injurious to the interests of the working classes of the neighbourhood.——The Crédit Foncier of France, which had purchased the celebrated château of Chénonceau, is about, it is understood, to relinquish it to a wealthy American, Mr. Terry, for a million francs.—— A new Lycée for boys and girls is to be opened in a few months at Agen (Lot-et-Garonne).——A committee has been formed at La Flèche in order to erect by public subscription a statue to the composer Delibes, who died last year, and was born near La Flèche, at St. Germain du Val. The scheme is supported by MM. Ambroise Thomas, Gounod, Massenet, and Saint-Saëns.——It is announced that Rosa Bonheur has just completed a very large picture at which she has been working for three years in the quiet country near Fontainebleau. The picture, entitled "Dépiquage," represents horses, life-size, in full trot, treading out the corn. The artist has already, it is said, refused an offer of 300,000 f. for the picture.

SWEDEN.—In view of it this year being 500 years since the birth of Saint Birgitta, who was closely associated with the Vadstena Cloister, and which she founded in 1350, the Swedish Government has voted a first instalment of 5,550*l.* towards the restoration of the Vadstena Convent Church, which is described as "one of the most monumental edifices in Sweden." A public subscription is also being raised in Sweden, Norway, and Denmark towards the restoration.——The Swedish Government has made a grant to Herr Wenström, electrical engineer, for the purpose of proceeding to Switzerland in order to study the installations in use in that country for the transmission of water power by electricity, with a view to similar arrangements being made for the utilisation of the Crown's waterfalls at Trollträttan, near Gothenburg.——Drawings and estimates for the new barracks to be erected at Gothenburg will shortly be completed. The cost of the building will be about 100,000*l.* —— The restoration of the ancient and historical Castle of Gripsholm, near Stockholm, which may be styled "The Tower" of the Swedish capital, will be commenced at once. It is undertaken by a private society, but King Oscar is furnishing material assistance. The total cost of the same is estimated at 25,000*l.*, and most of this sum will have to be raised among the public. The architect is Herr Liljequist.——It is intended to light the Stockholm Town Hall by electricity.——King Oscar is proceeding with the work of restoring the interior of the Castle of Drottningholm. The "Marshal's Hall" has already been restored to its original appearance, and now the "Oscar's Hall" has been completed, under the direction of the architect, Herr August Lindegren. The walls have been hung with old tapestries, the doors exchanged for others in the style of the sixteenth century, with chiselled silver handles bearing the King's initials, carved and gilt panels inserted in the former and in the window recesses, the fireplace restored in the same style, a huge overmantel built, with flowers and leaves in bold relief, cast in the same manner as that followed with the old stucco work in the palace. The furniture is also in the style of the sixteenth century, having been purchased by the King some years ago from a famous Swedish collection. It includes a set of carved and gilt furniture from the time of Louis XIV., one of the most valuable art-treasures of the castle. All of it has been renovated, re-gilt, and re-covered, the brocade used in the latter work having been specially manufactured at Lyons from a piece of the original covering accidentally left under a later cover. The entire cost of the work of restoration is borne by King Oscar.

MILAN.—Besides the monuments which are to be erected in Vienna and Cologne in memory of the late Von Schmidt, there is to be one at Milan, in which the deceased spent the years 1857-1859 as a master in the architectural school.—*Deutsche Bauzeitung.*

STRENGTH OF MASONRY ARCHES.—The Austrian Society of Engineers and Architects are at present carrying out a series of experiments on the resistance of masonry arches, so as to arrive at data upon which formulæ to show the permissive working stresses may be founded. The elastic and resistant properties of materials used will be investigated by experiment. The strength of brick, concrete, and terra-cotta floors will also be inquired into, and there will be a series of experiments to determine the conditions of arches for bridges of 75 ft. span.

MISCELLANEOUS.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY. —The first lecture of the present session, promoted by the Leeds and Yorkshire Architectural Society, was delivered on Monday in the Leeds Law Institute, Albion-place, by Mr. Wm. Bruce, whose subject was "Cements and Concretes." Mr. W. H. Thorp (President of the Society) occupied the chair.

ROBERT BOYLE & SON (LIMITED).—The annual general meeting of this Company was held at the City Terminus Hotel on the 25th ult., when a dividend of 12½ per cent. was declared on the ordinary and deferred shares, one-sixth of the profits being placed to the reserve fund, and a balance of 266*l.* 11s. 5d. carried forward to next year. Mr. Robert Boyle, Chairman and Managing Director, in moving the adoption of the report and accounts, which were unanimously adopted, said that no efforts had been spared to bring the business of the Company into its present prosperous condition, the year ended having been the most profitable since the formation of the Company, notwithstanding the great strike in the building trade, which had lasted for over six months, and the almost unprecedentedly severe weather experienced during the whole year, which naturally might have been expected to affect the demand for ventilating appliances, as in very cold and inclement weather the necessity for ventilation was neither so evident nor desirable as in warm weather.—The directors and auditors having been re-elected, they and a number of shareholders having referred in highly complimentary terms to the able manner in which Mr. Boyle had managed the affairs of the Company, the proceedings terminated with unanimous votes of thanks to the Chairman and directors.

PROJECTED JUNCTION OF THE BELGIAN AND DUTCH CANAL SYSTEMS.—A Belgian and Dutch syndicate has been formed for connecting the canal system of Belgium and Holland by constructing a canal from the Rhine at Uerdingen, *viâ* Crefeld, Neersen, Gladbach, Rheydt, and Roermond, to the Maas.

RESTORATION OF WIBORG CASTLE, FINLAND.—The work of restoring the ancient and historical castle of Wiborg, in Finland, is proceeding this winter, but, on account of the cold, with fewer hands. The castle will, however, not be restored to its grandeur in the fifteenth and sixteenth centuries, but to its appearance when taken by Peter the Great in 1710, as there are no drawings, plans, or charts in existence from that period. The work of restoration will be completed in 1893, or exactly 600 years after the building of the castle.

THE CONGO RAILWAY.—The work on the Congo Railway, says the *Mouvement Géographique*, which is to connect the upper and lower navigable portions of the river, is actively progressing, the force at work numbering 200 Europeans and 3,500 blacks.

THE "EPICURE" COOKING-RANGE.—We have received an illustrated catalogue of the Poore's Chev Cooking Range Syndicate containing an illustration of the above-named range, and, judging from the sketches and description given, it appears to possess several advantages. John Bull has a dislike to baked meats, and his dislike is a sound and wholesome one; baked meats are not as good as roast. The "Epicure" cooking-range possesses an oven which promises to cook a joint as well as if it were put before an open fire. A brick is removed in the bottom of the oven, and the direct heat of the fire comes through the aperture into the oven. The

hot air passes away through a small pipe at the top into the main draught, thus there is a constant current of hot air passing through the oven. The amount of fuel consumed is very small in these ranges, and that is certainly an advantge nowadays, not only on account of economy of coal, but because the more coal that is burnt the blacker become our fogs. Of course, all cooking-ranges have to be tested, their bad tempers often are not apparent at first, but this one promises well.

THE ENGINEERING WORKS AT THE IRON GATE.—Vienna journals state that the engineering works at the Iron Gate in the Danube have been suspended, as the *entrepreneurs* for the blasting, contracted at 70 kreutzer per cubic mètre, have had to pay 7 florins per cubic mètre. If the work be broken off they will have to forfeit 1,000,000 florins for breach of contract.

ELECTRIC ELEVATORS.—The transmission of power by means of electricity appears to be making considerable progress in the United States. In a paper read at the last meeting of the British Association, Professor George Forbes gave some details which he had gathered during a visit to America, and we have further particulars in a paper read by Mr. Spaulding at a meeting of the Society of Mechanical Engineers. In one plant instanced more than twenty separate motors are operated at a distance of 1,400 ft. from the central engine and dynamo. Speaking of electric passenger elevators, he pointed out that the earlier applications of electricity failed from the fact that the motor had to be started, stopped, or reversed according to the movements required for the cage. Of late, however, the development of quick-controlling and reversing apparatus, with special types of motors, has made possible results fully equal in smoothness of operation to the best hydraulic practice, while the running expense is usually considerably less. One type of improved high-speed passenger elevator is now in operation in a large building, consisting of offices, in Boston, the controlling mechanism being entirely in the cage, and operating through flexible cables. Automatic brakes are provided, which are thrown into operation by the shutting off of the current. In another installation mentioned, the armature shaft of the motor can, at any desired speed, be made to run in either direction by electrical means. Electricity is also largely used with advantage for travelling cranes.

UNIFORM RAILWAY TIME IN GERMANY AND AUSTRIA.—The railway administrations of Germany and Austria have agreed upon adopting a uniform time, viz., so-called "zone" time. The earth is divided into twenty-four zones of 15 degrees each, the time adopted within each zone being that fixed by a line drawn through its centre. The zones are reckoned from the Greenwich Meridian, so that the uniform time adopted for the railway of Germany, Austria, Hungary, and Servia will be one hour in advance of Greenwich time. The time for the Roumanian and Bulgarian railways, as well as the Turkish main line between Bellova and Constantinople, will again be one hour in advance of the central European time.

THE BUSINESS OF THE LATE MR. W. W. PHIPSON.—We are asked to mention that the executors of the late Mr. W. W. Phipson have assigned the goodwill of the business until lately carried on by him, to Messrs. F. Ashwell & Co., of Leicester, who will continue to carry it on at the old address in John-street, Adelphi.

MEETINGS.

SATURDAY, DECEMBER 5.

Sanitary Inspectors' Association (Carpenters' Hall).—Mr. E. Lewis Thomas on "The Public Health (London) Act, 1891." 6 p.m.

SUNDAY, DECEMBER 6.

Sunday Lecture Society.—Mr. Eric S. Bruce, M.A., on "Fogs and their Prevention." 4 p.m.

MONDAY, DECEMBER 7.

Surveyors' Institution.—Mr. C. H. Bedells on "Party and Party-Fence Walls." 8. p.m.

Society of Engineers.—Mr. G. M. Lawford on "The Drainage of Town Houses." 7.30 p.m.

Society of Arts (Cantor Lectures).—Mr. A. P. Laurie, M.A., on "The Pigments and Vehicles of the Old Masters." II. 8 p.m.

Clerks of Works' Association (Carpenters' Hall).—Mr. R. W. Burton on "The Decimal System." 8 p.m.

Victoria Institute.—Paper by the Rev. W. St. Clair Tisdall, M.A. 8 p.m.

Liverpool Architectural Society.—Rev. F. F. Grensted on "Egypt as a Home of Early Art." I. 7 p.m.

TUESDAY, DECEMBER 8.

Institution of Civil Engineers.—Mr. Henry Gill on "The Sale of Water by Meter in Berlin." 8 p.m.

Sheffield Society of Architects.—Mr. William H. White on "The Architect and his Artists."

WEDNESDAY, DECEMBER 9.

Society of Arts.—Mr. James Dredge on "The World's Columbian Exhibition at Chicago in 1893." 8 p.m.

St. Paul's Ecclesiological Society.—Objects of Ecclesiological interest to be exhibited and described. 7.30 p.m.

London Society for the Extension of University Teaching (Chelsea Centre).—Mr. A. H. Fison, D.Sc., on "Electricity and its Modern Applications." X. 8.15 p.m.

Liverpool Engineering Society.—Mr. Ivan C. Barling on "Sounding Apparatus." 8 p.m.

THURSDAY, DECEMBER 10.

Institution of Electrical Engineers.—(1) Reception of Annual Report. (2) Mr. W. H. Preece, F.R.S., on "The Specification of Insulated Conductors for Electric Lighting and other Purposes." 8 p.m.

Society of Antiquaries.—8.30 p.m.

Dundee Institute of Architecture. — Mr. F. Grant Ogilvie, M.A., on "Electric Lighting of Houses." 8 p.m.

FRIDAY, DECEMBER 11.

Architectural Association.—Paper by Mr. T. G. Jackson, entitled "Some Suggestions for the Practical Education of an Architect." 7.30 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. C. H. Wordingham on "Meters for Recording the Consumption of Electrical Energy." 7.30.

London Society for the Extension of University Teaching (Hampton Court Centre).—Mr. Locke Worthington on "Architecture." VI. 2.30 p.m.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

18,150.—DADOS AND WALL FRAMES: *E. Marrer.*—This invention refers to a dado that can be reversed in order to show either a picture or an ordinary panel, and this is effected by making the dado swing on hinges and by the use of swing ledges. A room having a plain bevelled dado may, by the use of this improved appliance, be transformed in a few minutes into a picture-screen or gallery without having to apply hooks, rings, or hinges.

20,200.—LAYING OFF WOODWORK: *R. G. Love* (U.S.A.).—The specification describes a machine for laying off and marking the stiles of shutters, doors, &c., preparatory to cutting the mortises therein by a mortising-machine, in order to save labour and ensure accuracy. It is a somewhat complicated mechanism.

17.—GLAZING ROOFS: *F. & E. Collinson.*—It is claimed as the chief characteristic of this improvement that no woodwork or material is exposed to the weather. Rafters or purlins of any pattern not rebated are used in the usual manner for glazing with putty; panes of glass are used, each pane overlapping the one immediately below it and secured to the rafters by copper clips.

238.—BRICK-BURNING KILNS: *W. Sercombe.*—In the kilns, which are the subject of this invention, the main flue is in the middle forming foundation for inside part of arches which form a continuous tunnel. The main flue leads through one end of the kiln to the stack. It is divided into chambers and arranged to convey the heat through each.

1,553.—MOVABLE DECORATED DOOR PANELS: *W. Jackson.*—The panels which are the subject of this patent are made of wood or metal, and are attached by glue or nails, so that they may be removed without injury to the door.

11,768.—WINDOW-SASHES AND FRAMES: *W. Pattenden and A. Rindesland.*—In combination with sash-frames parts are provided to form convertible raising and lowering sashes, with hinged device for opening the sashes in casement form.

14,642. — DRAIN-TRAPS: *J. Cabuy (Brussels).* — A counter-weighted pivotted hinged flap is fitted to the trap, so that solid matters reaching a certain weight causes it to fall, and discharge them into the drain.

NEW APPLICATIONS FOR LETTERS PATENT.

November 16.—19,827, S. Wilkins, Construction of Fireproof Doors, &c.—19,857, F. Lipscombe, Chimney Cowls and Cowls for Ventilating Shafts.

November 17.—19,877, C. Nube, Adjustable Clamps for Bench Vices.—19,887, A. McNerney, Hanging of Doors and Shutters, whereby the closing of same may be rendered Automatic without the Aid of Springs.—19,910, C. Knapp, Automatic Sash Lift and Lock.—19,940, W. and E. Freeman, Flushing Apparatus for Sanitary Purposes.—19,947, C. Crosby, An Appliance for Preventing Down Draught in Chimneys and other Shafts.—19,962, A. Clark, Sash-fasteners.—19,966, H. Lake, Feeding Mechanism for Wood-working Machinery.

November 18.—19,997, H. Crane, Syphon Flushing Cisterns and Water-waste Preventers.—19,998, H. and W. Defries, Window-frames.—20,019. C. Watts, Combination of Pipes for Circulation of Hot Water in Heating Greenhouses, &c.

November 19.—20,073, C. Heyworth, Anti-vibrating and Self-closing Watertap.—20,096, J. Wilson, Kilns for Drying and Burning Bricks, &c.—20,100, C. Harwood, Non-corrosive and Water-waste Preventing Cistern for Water-closets.—20,110, G. Richmond and J. Wainwright, Fasteners for Doors and Windows.—20,143, H. Wilson, Mitring Machines.

November 20.—20,166, The Widnes Inventions Syndicate, Limited, and W. Husband, Door-handles —20,210, R. McMillen, Window Sash-balance.—20,216, E. Butler, Brick-making Machines.—20,218, A. Boult, Protecting Window Curtains from Casement Windows.

November 21.—20,232, A. Spaulding, Flexible Doors.—20,238, J. Wright, Chimney-top applicable also as a Ventilator.—20,274, R. Lender, Rust and Acid proof Paint.—20,280, Craven Dunnill & Co., Limited, and F. Smith, Tiles, &c.—20,281, W. Stfin, Bakers' Ovens.

PROVISIONAL SPECIFICATIONS ACCEPTED.

17,287, W. Deeley, Syphon-flushing Cisterns, and Water-waste preventers.—17,404, A. Haslam, Domestic and other analogous Fireplaces or Grates.—17,695, T. Newton, Drain-pipe. — 18,435, G. Bratt, Locks and Latches.—18,776, Siemens Bros. & Co., Limited, Boring Tools for boring in Stone.—19,023, G. Couch, Window-sashes, Frames, and Fittings.—19,372, H. Dunsford, Windows.—19,441, W. Pilkington, Forming Molten Glass into Sheets.—19,467, J. Bloomfield, Plaster.—19,534, W. Briggs, Concrete Paving or Flooring.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to Opposition for Two Months.

19,763, D. Baker, Closets and other Pipe-fitting.—789, J. Gibson, Window-sashes and Frames, &c.—1,095, F. Jackson, Stoves and other Fireplaces for the Better Consumption of Fuel.—1,115, W. Taylor, Cement.—14,059, J. Barry and P. Rice, Stoves.—18,127, J. Lillington, Combination-tool for Clamping Timber.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

NOVEMBER 23.—By *Dennant & Co.*: 13, Harefield-rd., Brockley, u.t. 81 yrs., g.r. 7*l.* 2s., 400*l.*—By *R. Tyser & Co.*: 85, 89, and 91, Fairfax-rd., Hornsey, f., r. 81*l.*, 990*l.*; l.g.r. of 41*l.* 16s., u.t. 49 yrs., g.r. 7*l.*, Kentish Town, 610*l.*—By *A. G. Windsor*: 77 to 83 (odd) Bemerton-st., Islington, u.t. 49 yrs., g.r. 24*l.*, 850*l.*; 147 to 155 (odd), Bemerton-st., u.t. 49 yrs., g.r. 30*l.*, 895*l.*—By *Whetherly & Haslett*: Nos. 327, 329, and 331, Fulham-rd., u.t. 76 yrs., g.r. 55*l.* 10s., r. 360*l.*, 3,850*l.*; 71, Loampit Vale, Lewisham, u.t. 50 yrs., g.r. 10*l.*, r. 60*l.*, 390*l.*

NOVEMBER 24.—By *A. Richards*: "Stamford House," Tottenham, f., 1,000*l.*; 14, Evelyn-rd., Richmond, f., r. 34*l.*, 540*l.* By *Weston & Son*: 19, Edithna-rd., Stockwell, u.t. 81 yrs., g.r. 5*l.*, r. 35*l.*, 245*l.* By *Bean, Burnett, & Co.*: 1b to 23 (odd), Rigeley-rd., Willesden, u.t. 88 yrs., g.r. 30*l.*, 690*l.* By *Ray & Murrell*: 5 and 7, Brodrick-rd., Wandsworth, u.t. 79 yrs., g.r. 12*l.*, r. 83*l.*, 910*l.*; No. 110, Trinity-rd., f., 315*l.*

NOVEMBER 25.—By *Taylor & Co.*: 53, Winchester-st., Pentonville, u.t. 41 yrs., g.r. 16*l.*, r. 46*l.*, 155*l.*—By *Briant & Son*: 2 to 8 (even), Portland-pl. North, Clapham, u.t. 29 yrs., g.r. 10*l.*, r. 148*l.*, 1,305*l.*; 10 to 16 (even), Portland-pl. North, u.t. 29 yrs., g.r. 20*l.*, r. 146*l.*, 1,075*l.*—By *A. Prevost & Son*: 72, 74, and 76, Glyn-rd., Clapton, u.t. 87 yrs., g.r. 15*l.*, r. 78*l.*, 395*l.*; 69 and 70, Ely-pl., Mile-end, u.t. 19 yrs., g.r. 2*l.* 10s., r. 44*l.* 4s., 175*l.*; 37, Harford-st., u.t. 16 yrs., g.r. 5*l.*, r. 30*l.*, 190*l.*—By *Hobson, Richards, & Co.*: f.g.r. of 72*l.*, with reversion in 70 yrs., Bromley-by-Bow, 1,525*l.*—By *R. Tidey & Son*: 44, Florence-st., Islington, f., r. 44*l.*, 570*l.*; 59, 61, and 63, New North-rd., u.t. 51 yrs., g.r. 18*l.* 18s., 2,100*l.*; 65 and 67, New North-rd., u.t. 51 yrs., g.r. 12*l.* 12s., 1,750*l.*—By *J. A. Smith*: No. 144, Hammersmith-rd., u.t. 46 yrs., g.r. 6*l.* 12s., 760*l.*; No. 166, Hammersmith-rd., u.t. 48 yrs., g.r. 6*l.* 6s., 600*l.*; f.g.r. of 4*l.*, with reversion in 77 yrs., Leyton-stone, 90*l.*; f.g.r. of 17*l.*, with reversion in 74 yrs., Lefevre-rd., Bow, 400*l.*; f.g.r. of 40*l.*, with reversion in 18 yrs., Stewart's-rd., Battersea, 2,130*l.*; f.g.r. of 12*l.* 12s., with ditto in 15 yrs., 540*l.*; f.g.r. of 22*l.* 3s., with ditto in 18 yrs., Linford-st., 780*l.*; f.g.r. of 2*l.* 10s., with ditto in 20 yrs., 100*l.*; f.g.r. of 2*l.* 8s., with ditto in 22 yrs., 90*l.*; f.g.r. of 12*l.* 12s., with ditto in 30 yrs., 405*l.*; f.g.r. of 12*l.* 19s. 6d., with ditto in 31 yrs., 380*l.*; f.g.r. of 10*l.* 10s., with ditto in 15 yrs., Stewart's-rd., 470*l.*; 72 and 74, Stewart's-rd., f., 705*l.*

NOVEMBER 26.—By *W. W. Wreford & Co.*: 9, 10, and 11, Montague-av., Brockley, u.t. 74 yrs., g.r. 27*l.*, 1,565*l.*—By *T. G. Wharton*: 4, 6, and 8, Turner's-rd., u.t. 72 yrs., g.r. 15*l.*, r. 120*l.* 16s., 740*l.*—By *Stimson & Sons*: f.g.r. of £57. 15s., with reversion in 87 yrs., Wilford-rd., Croydon, 950*l.*; f.g.r. of 21*l.*, with ditto in 92 yrs., Lahore-rd., 380*l.*; f.g.r. of 96*l.*, with ditto in 85 yrs., Beaconsfield-rd., Tottenham, 2,120*l.*; 3 to 6, Brussels-rd., Croydon, f., r. 147*l.*, 1,760*l.*; 5 to 10, Oberstein-rd., f., r. 213*l.*, 2,435*l.*—By *C. C. & T. Moore*: 46, 48, and 50, Cambridge-rd., Bethnal Green; 2, 4, and 6, Key-st.; and 1 and 2, Key-ct., f., 700*l.*; 8 to 44 (even), Key-st., f., 2,795*l.*; 1 to 37 (odd), Key-st., f., 1,995*l.*; 52 and 56, Cambridge-rd., f., 1,040*l.*; a plot of freehold land in Cambridge-rd., 180*l.*; 2 to 32 (even), Faith-st., f., 1,080*l.*; 1 to 25 (odd), Faith-st., f., 765*l.*; 60 to 66, and 70 to 78 (even), Cambridge-rd., f., 4,345*l.*

NOVEMBER 27.—By *H. C. Newson*: 24, Great Chapel-st., Westminster, and "The Angel" public-house, f., 5,800*l.*; a profit rental of 94*l.*, u.t. 27 yrs., Lewisham-rd., 750*l.*—By *Deverell & Co.*: 57 and 59, Lawford-rd., Kentish-town, u.t. 70 yrs., g.r. 16*l.*, r. 90*l.*, 1,080*l.*; 9 and 13, Bartholomew-villas, Camden Town, u.t. 70 yrs., g.r. 15*l.*, 1,360*l.*—By *Baker & Son*: 'The Lodge," and 1a. 2r. 8p., f., Malden, Essex, 1,000*l.*; a plot of freehold land, Catford, 290.*l*

[*Contractions used in these lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; l.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

PRICES CURRENT OF MATERIALS.

TIMBER.		
Greenheart, B.G. ton	9/0/0	0/0/0
Teak, E.I... load	8/10/0	14/0/0
Sequoia, U.S.ft.cu.	2/3	3/0
Ash, Canada load	2/5/0	4/0/0
Birch, do.	2/10/0	4/5/0
Elm, do.	3/5/0	4/15/0
Fir, Dantsic, &c.	2/0/0	3/10/0
Oak, do.	2/10/0	4/10/0
Canada.....	4/17/6	6/10/0
Pine, Canada red	2/10/0	3/10/0
Do, yellow	2/0/0	5/0/0
Lath, D'ntsic, fath	5/0/0	6/0/0
St. Petersburg	5/0/0	7/0/0
Deals, Finland, 2nd & 1st std 100	8/0/0	10/10/0
Do, 4th & 3rd..	7/10/0	8/10/0
Do. Riga	6/10/0	8/0/0
St. Petersburg, 1st yellow ..	10/10/0	15/0/0
Do, 2nd yellow	8/10/0	10/0/0
Do, white	7/0/0	10/10/0
Swedish	7/10/0	15/10/0
White Sea	8/10/0	17/10/0
Canada, Pine 1st	13/0/0	25/0/0
Do. do. 2nd....	9/0/0	16/10/0
Do. do. 3rd, &c.	6/10/0	10/0/0
Do. Spruce. 1st	8/10/0	10/10/0
Do. do. 3rd & 2nd.....	6/0/0	7/15/0
New Brunswick	5/10/0	7/10/0
Battens, all kinds	3/10/0	15/10/0
Flooring Boards, sq., 1 in. prep. 1st	0/8/6	0/14/0
Do. 2nd.....	0/7/6	0/11/0
Other qualities	0/5/0	0/8/0
Cedar, Cuba ..ft.	/3½	/4½
Honduras, &c.	/3½	/4½
Mahogany, Cuba.	/4½	/6½
St. Domingo, cargo av	/4½	/6½
Mexican do. do	/4	/5
Tobasco do. do	/5½	/7
Honduras do..	/5½	/6½
Box, Turkey ton	4/0/0	13/0/0
Rose, Rio.....	10/0/0	20/0/0
Bahia	9/0/6	18/0/0
Satin, St. Domingo ....ft.	0/0/9	0/1/0

TIMBER (*continued*).		
Satin, Porto Rico	0/0/10	0/1/6
Walnut, Italian..	0/0/3½	0/0/7
METALS.		
IRON—Pig, in Scotland .....ton	2/7/6	2/8/0
Bar, Welsh, in London.....	6/0/0	6/2/6
Do. do. at works in Wales	5/10/0	5/12/6
Do. Staffordshire, in London	6/10/0	6/15/0
COPPER—British, cake and ingot	47/0/6	50/0/0
Best selected ..	49/0/0	51/0/0
Sheets, strong..	58/10/0	59/10/0
Chili, bars	44/5/0	44/12/6
YELLOW METAL lb.	0/0/5½	0/0/5¾
LEAD — Pig, Spanish ....ton	11/12/6	11/13/9
English, com. brands	11/13/9	11/16/3
Sheet, English, 3 lbs. per sq. ft. and upwards ..	13/5/6	0/0/0
Pipe	13/15/0	0/0/0
ZINC — English sheet .....ton	26/10/0	0/0/0
Vieille Montagne.....	27/0/0	0/0/0
TIN—Straits	91/15/0	92/5/0
Australian	91/15/0	92/5/0
English Ingots	95/0/0	95/10/0
OILS.		
Linseed .....ton	18/17/6	19/0/0
Cocoanut, Cochin	26/15/0	27/0/0
Do. Ceylon	23/10/0	23/15/0
Palm, Lagos	23/10/0	0/0/0
Rapeseed, English pale	30/5/0	0/0/0
Do. brown	28/10/0	28/15/0
Cottonseed ref...	18/15/0	19/0/0
Oleine	0/0/0	0/0/0
Lubricating, U.S.	4/10/0	5/10/0
Do. refined	6/0/0	11/0/0
TAR—Stockholm barrel	0/19/0	1/0/0
Archangel	0/12/6	0/0/0

TENDERS.

[Communications for insertion under this heading must reach us *not later than* 12 *noon on Thursdays.*]

ALDENHAM (Hertford).—For constructing new class-rooms, &c., Aldenham Grammar School. Mr. E. H. Martineau, architect; Mr. W. B. Catherwood, surveyor :—

Holland & Hannen	£3,330	Waterman	£3,244
Treasure & Son	3,324	Turner & Co.	3,227
Gregory & Co.	3,279	Higgs & Hill	3,194
E. Lawrance & Sons	3,256		

ASHFIELD (Suffolk).—For a pair of cottages on the estate of the Right Honourable Lord Thurlow. Mr. J. Boothroyd Corby, F.S.I., architect, Stamford :—

J. Howes, Ixworth (accepted) £350 0 0

CHEADLE (Staffs.).—For sewerage-work, for the Sanitary Authority. Quantities by Mr. F. T. Inskip, surveyor, Dilhorne, Blythe Bridge, near Stoke-on-Trent :—

		Charles-street Extension.	
		s. d.	
Samuel Doyg	£165 0 0	9 6	per yard.
Harry Earl	150 0 0	7 6	,,
Samuel Preston & Son	124 14 3½	7 6	,,
Paul Bailey	117 0 0	6 9	,,
William Allcock, Cheadle, Stoke*	98 0 0	3 10	,,
Surveyor's estimate	98 0 0	5 6	,,

* Accepted.

CINDERFORD.—Accepted for the erection of Wesleyan Sunday-schools. Mr. John Wills, architect, Victoria-chambers, Derby :—

Samuel Freeman, Cinderford £1,190 0 0

LEVENSHULME (Manchester).—For draining and road works, for the Local Board. Mr. John H. Maybury, Surveyor, 25, Booth-street, Manchester. Quantities by the Surveyor :—

Geo. Boden	£220 0 0	Worthington & Pownall,	
W. & H. Walmsley	215 12 0	Manchester (accepted)	£205 3 11

NEWBRIDGE (Mon.).—For the erection of twelve and eight cottages, for the Newbridge Building Club. Mr. Evan Philips, surveyor, Newbridge :—

A. Richards	£3,856	Thos. Williams	£3,792
C. F. Morgan	3,796	Osborne & Co., Aberdare*	3,360

* Accepted.

PAIGNTON.—For erecting first portion of a residence at Polsham Park, for Mrs. G. S. Bridgman. Mr. Geo. Soudon Bridgman, architect. No quantities :—

Westlake	£599 10	H. Webber	£580 0
C. & R. E. Drew	585 0	Rabbich & Brown*	572 0

[Architect's estimate, £570.]

* Accepted.

PLYMOUTH.—For the erection of a cookery centre and caretaker's residence, Oxford-street, for the School Board. Mr. H. J. Snell, architect, 13, Courtenay-street, Plymouth :—

J. H. Palmer	£2,290	Tozer & Son	£1,587
T. A. Pearn & Sons	1,750	G. B. Turpin	1,581
J. Finch	1,668	Lapthorn & Goad	1,568
A. Marshall	1,620	Williams & Westlake	1,533
Reed Blight & Co., Ld.	1,598	W. Trevena	1,489
S. W. Sanders	1,597	T. May (accepted)	1,488

[All of Plymouth.]

SHEFFIELD.—Accepted for the erection of the Central school extension and a new school in Bow-street, for the School Board. Mr. J. B. Mitchell Withers, architect, 73, Surrey-street, Sheffield :—

Abraham Graham, Manchester-road, Huddersfield (accepted) £25,839 0 0

[Four other tenders.]

TENBY.—For the erection of a new Catholic church, Tenby, South Wales :—

		If Monk's Park Stone.
Estcourt	£4,280	£3,945
E. T. Hatherly	3 500	2,987
Stephens, Bastow, & Co.	3,479	3,099
T. Collins	3,450	3,160
Cowlin & Sons	3,069	2,719
G. Richards	2,948	2,530
Davies & Son	2,792	2,652

TO CORRESPONDENTS.

C. & M.—W. & Co.—F. T. W. G. (thanks).—T. W. C.—W. P. T. & Co. (we cannot accept a report of a law case from one of the parties to it, or any one acting for one of the parties).

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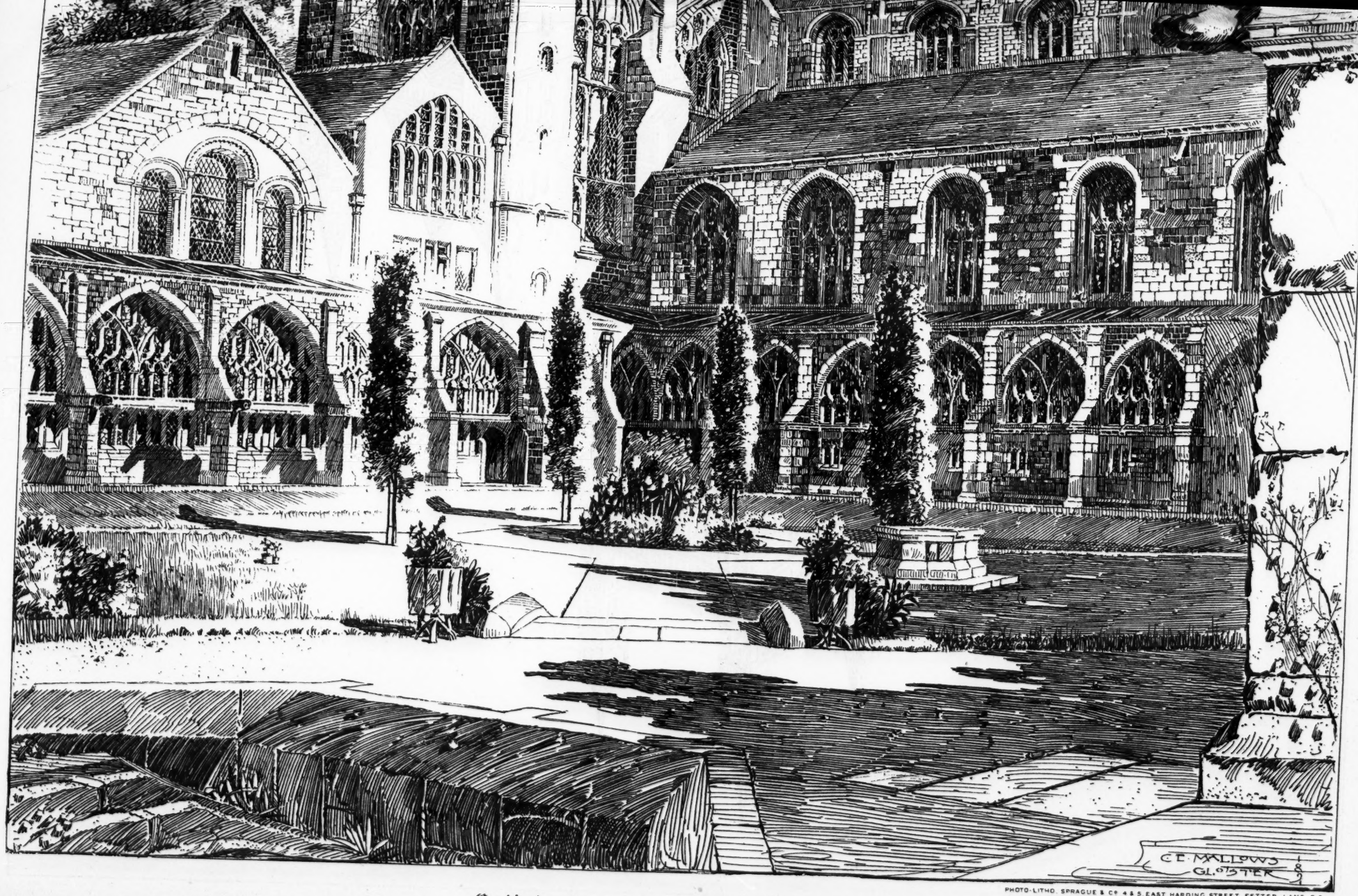

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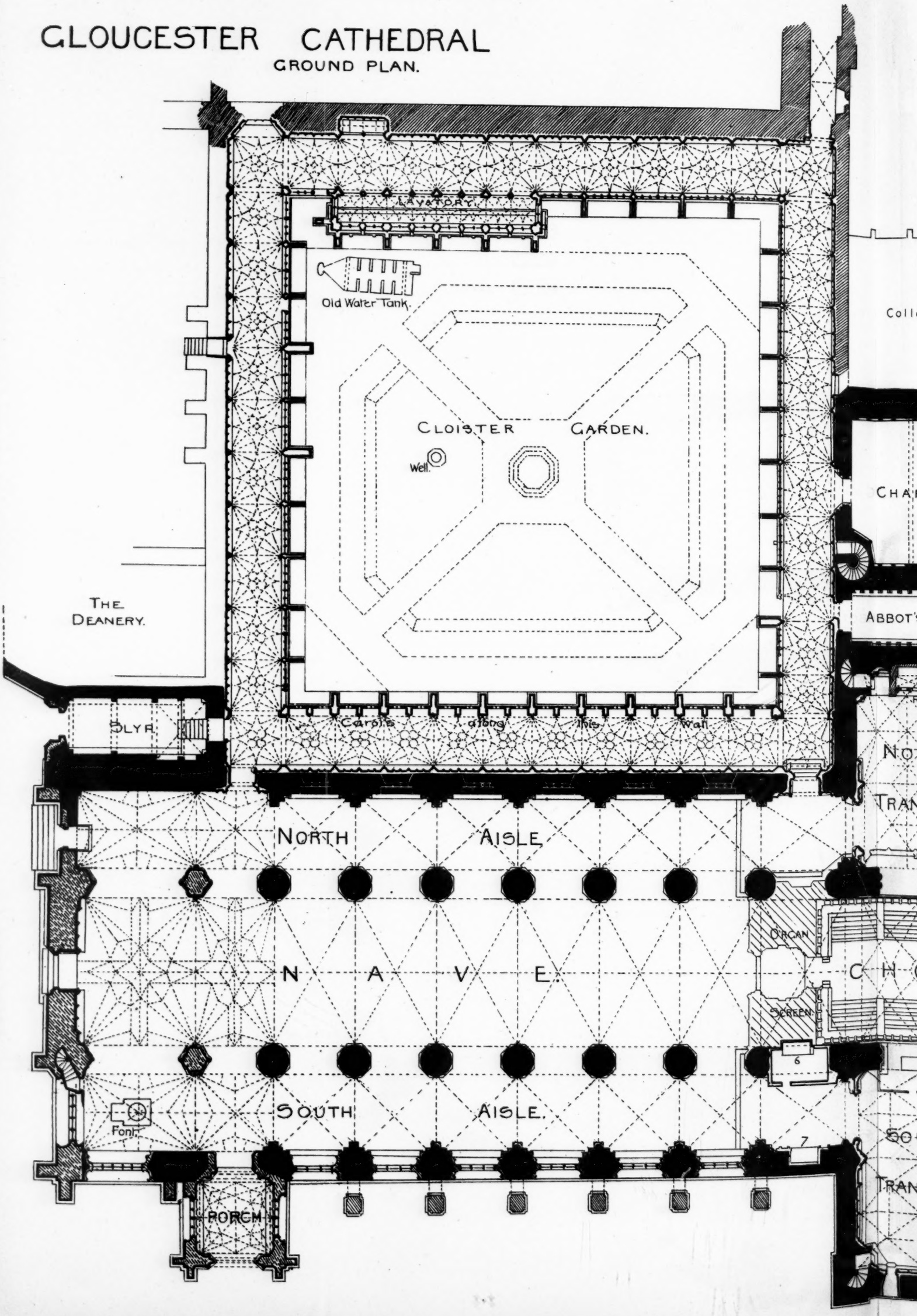
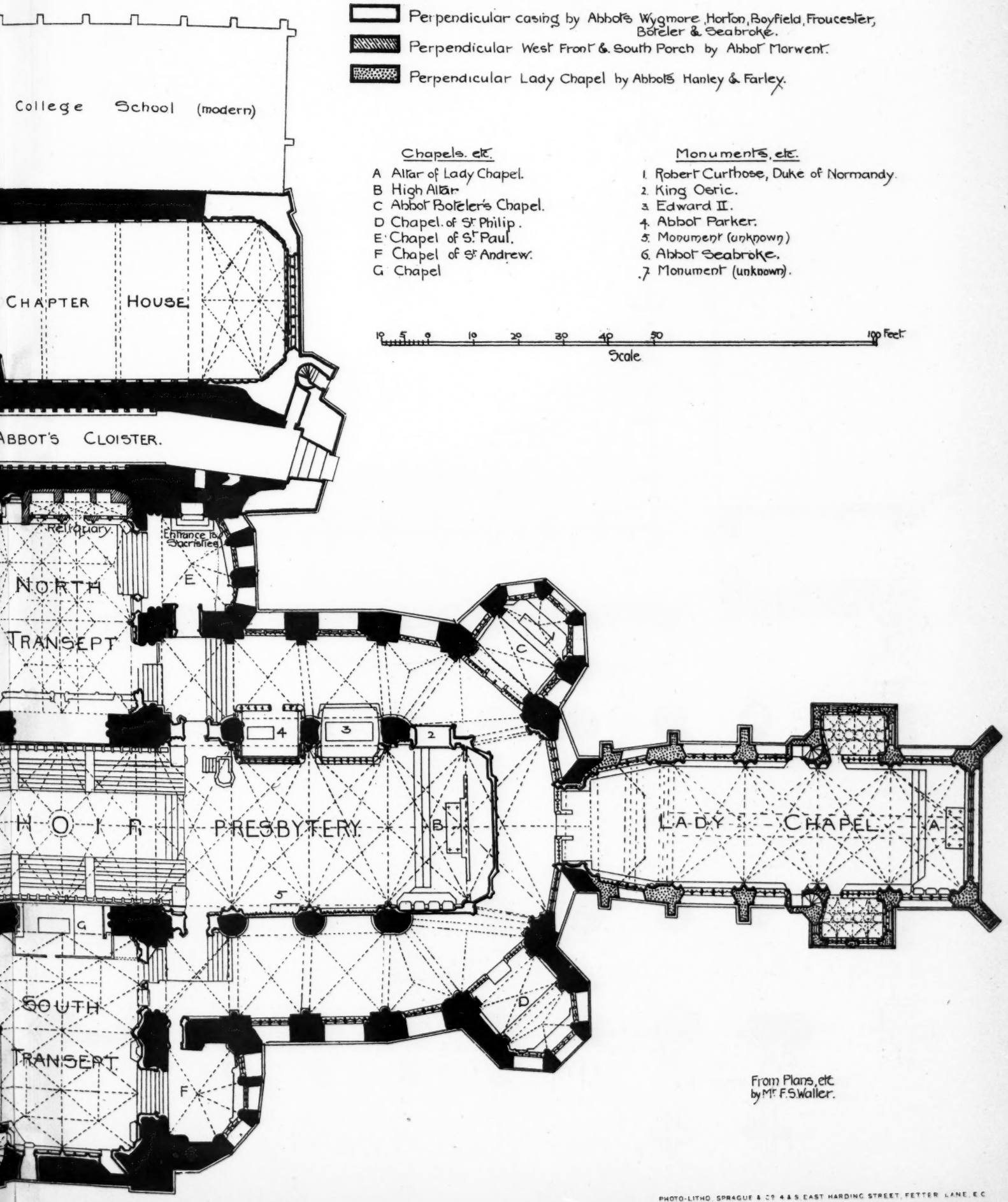
Cathedrals of England and Wales.

No 12 GLOUCESTER: FROM THE CLOISTER GARTH.—Drawn by Mr. C. E. Mallows.

GLOUCESTER CATHEDRAL

GROUND PLAN.





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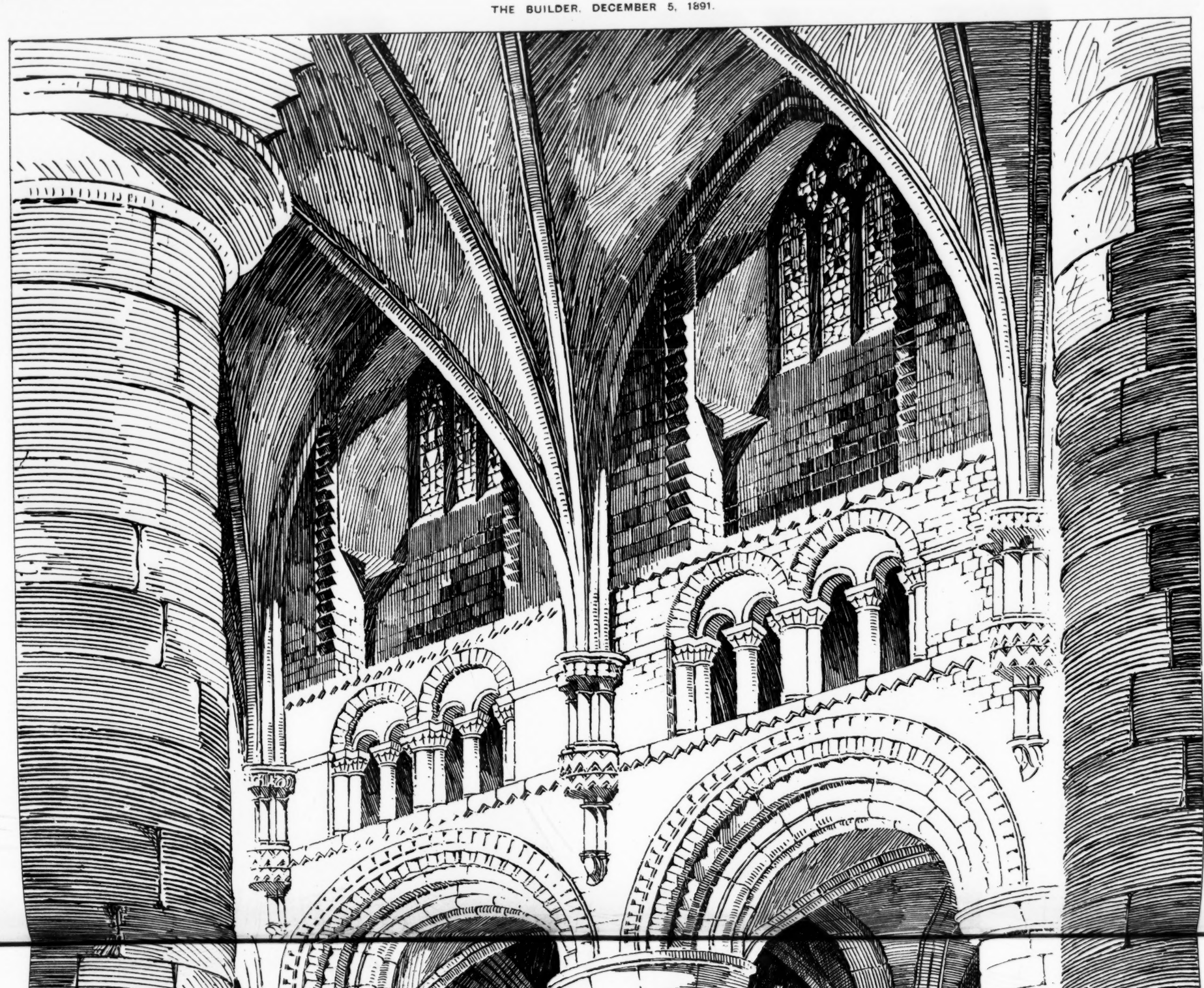
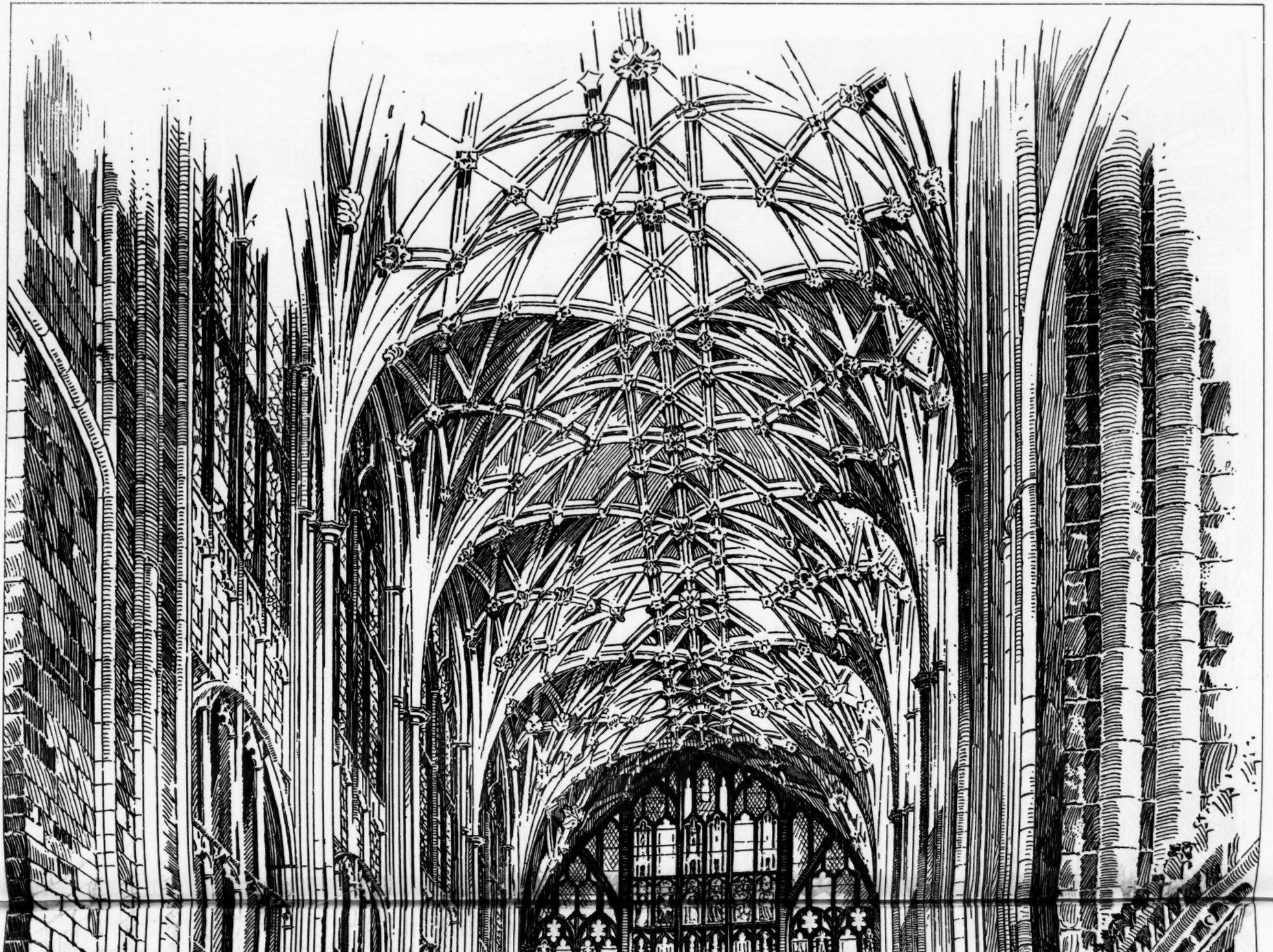


GLOUCESTER CATHEDRAL: INTERIOR OF THE NAVE.—From a Drawing by Mr. C. E. Mallows.



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GLOUCESTER CATHEDRAL: INTERIOR OF THE CHOIR.—From a Drawing by Mr. C. E. Mallows.

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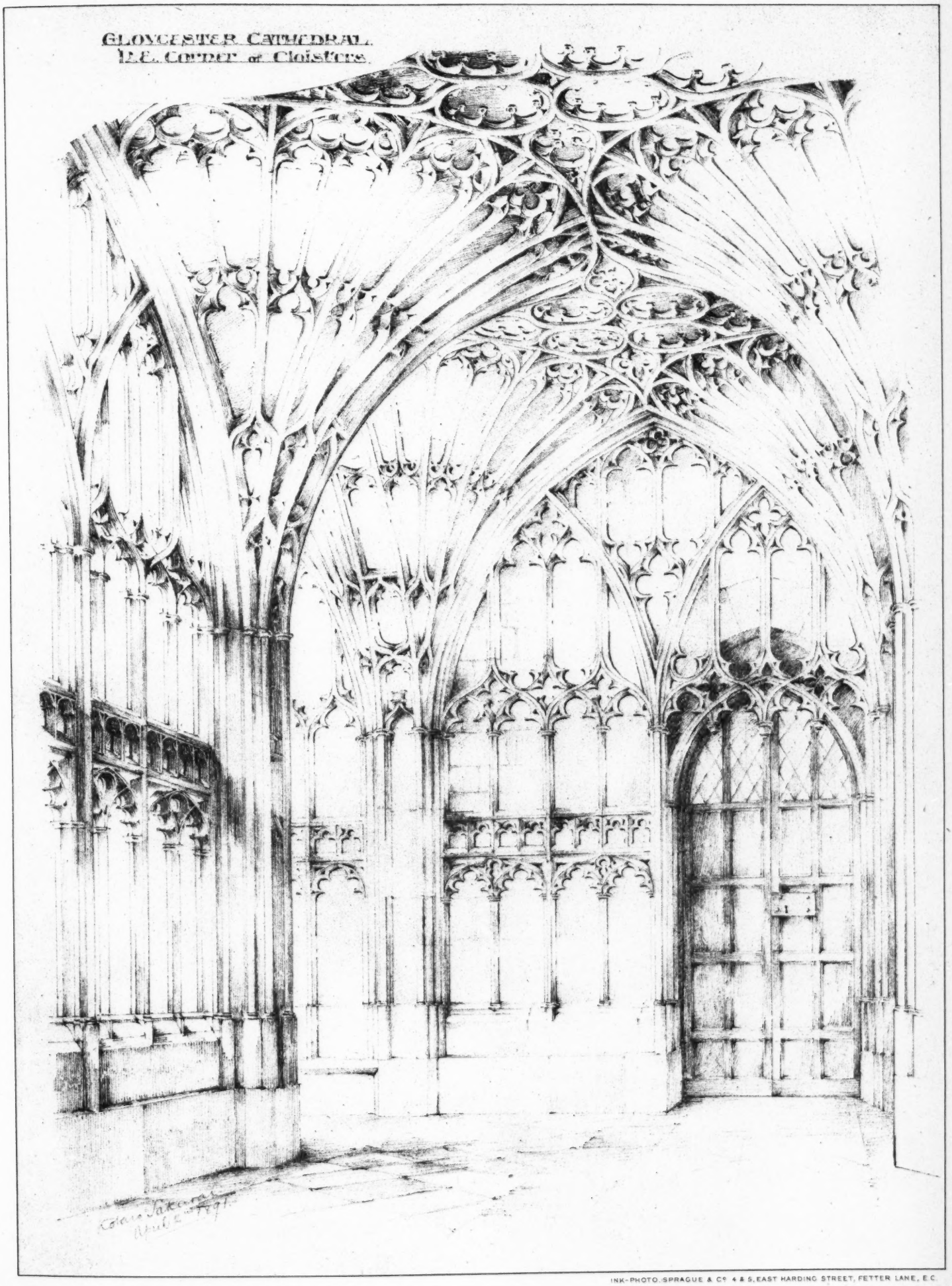
GLOUCESTER CATHEDRAL.
N.E. Corner of Cloisters.



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